Graduate School of Business

Determinants of Environmental Disclosure in the Oil Palm Industry in Malaysia

Frederica Mojilis

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DECLARATION

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Signature: 

Date: 24th July 2013

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ABSTRACT

This study examines the determinants of environmental disclosure in the oil palm industry in Malaysia. The primary methodology is quantitative, however both survey and interview data are used to enhance the validity of the findings. The research is motivated by the growing concern over the environmental impact of the oil palm business which has led to an increased demand for public disclosure on how companies are fulfilling their social and environmental obligations. Malaysia is chosen as the country setting as it is the second largest producer of palm oil after Indonesia, and is therefore a key player in the palm oil supply chain.

The study adopts a stakeholder theory perspective to capture the environmental impact of oil palm plantations on multiple stakeholders. It applies Ullmann's (1985) three-dimensional stakeholder model to examine the association of stakeholder power, strategic posture and economic performance of the companies to their environmental disclosure. The first phase of the research is analysis of annual reports environmental disclosure of thirty-three oil palm public listed company (PLCs) and a matched thirty-three non-oil palm PLCs over five years of data (2005-2009). The extent of environmental disclosure is measured using a ten-point score of environmental factors developed specifically for this study. The second and third phase of the research employs the use of semi-structured interviews and questionnaire survey to obtain views from senior managers of oil palm companies regarding environmental disclosure.

Environmental disclosure of Malaysian companies is shown to be low overall, with a significant difference between oil palm and non-oil palm companies. For oil palm companies, the quantitative analysis confirms the significant positive influence of government power, social/environmental concern, ISO 14001 certification and environmental committee on environmental disclosure. Economic performance measured by the ROA is not significant. For the matched non-oil palm companies, the results confirm the significant positive influence of shareholder concentration, creditor power, environmental committee and economic performance as measured

by ROA on environmental disclosure. Results from the interviews and survey were broadly supportive of the findings from the annual reports disclosure.

From a theoretical perspective, the study confirms the robustness of Ullmann's stakeholder model in examining environmental disclosure in a single industry (Malaysian palm oil) in a developing country. It also suggests that future stakeholder studies should include the role of customers/buyers, Board of Directors and senior management.

From a practical perspective, the low level of environmental reporting found in this study suggests there may be a role for regulation in improving the transparency of environmental reporting.

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INTRODUCTION

1.1 BACKGROUND

This study examines the determinants of environmental disclosure in the oil palm industry in Malaysia. The research is motivated by the growing concern over the environmental impact of the oil palm business, which has led to an increased demand for public disclosure on how companies are fulfilling their social and environmental obligations. Despite this, there is a lack of prior research on the extent and reasons for environmental disclosure in this environmentally sensitive industry. Malaysia is chosen as the country setting as it is the second largest producer of palm oil after Indonesia, and is therefore a key player in the palm oil supply chain.

1.1.1 Palm oil agriculture – a threat to the environment

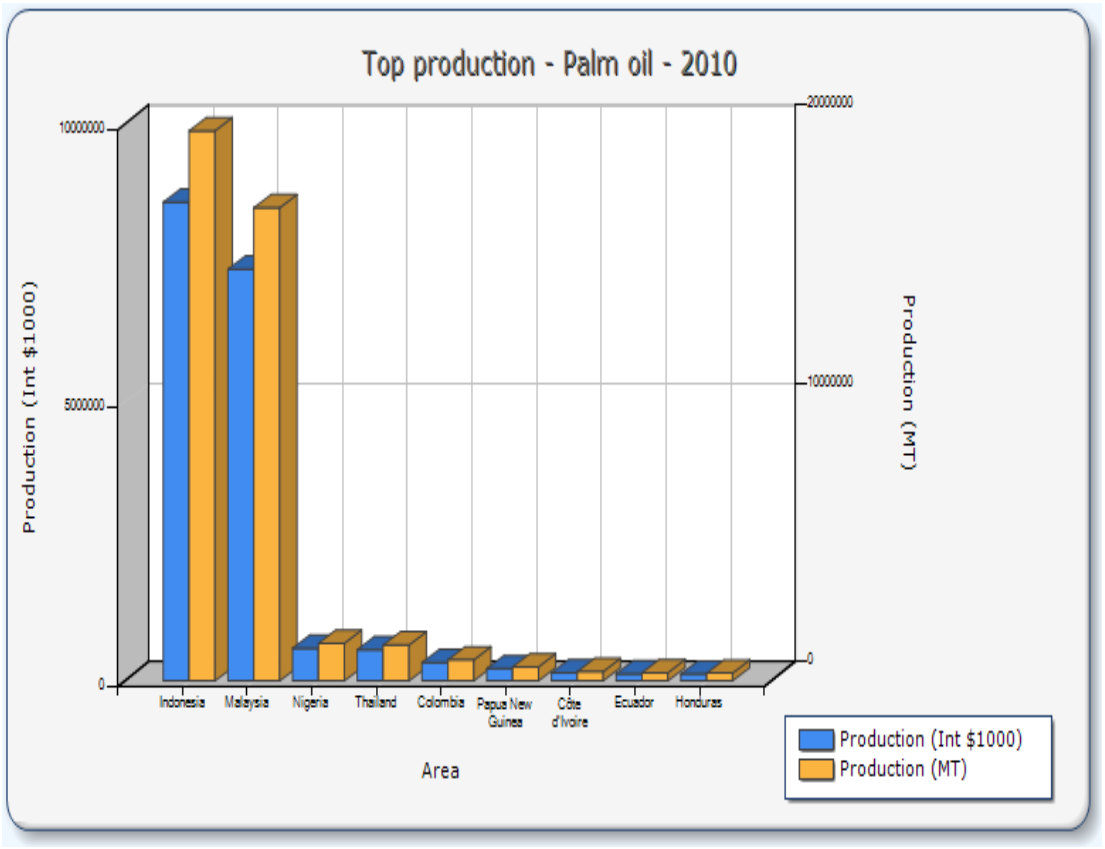
The oil palm industry is associated with a myriad of social and environmental issues, with oil palm agriculture being held responsible for causing the greatest threat to biodiversity in Southeast Asia due to the conversion of primary and logged forests to oil palm plantations (McMorrow and Talip 2001; Lian and Wilcove 2008; Wicke et al. 2008). Clearing large areas for oil palm agriculture has destroyed the natural habitat of many wildlife species, flora and fauna. NGOs contend that the expansion of oil palm agriculture in Southeast Asia destroys huge areas of tropical forests which threaten the survival of many native species and have launched aggressive media campaigns that lobby for the boycott of oil palm products (Lian and Wilcove 2007).

1.1.2 Malaysia – a major producer and exporter of palm oil

Malaysia is one of the fastest growing economies among the emerging nations with a GDP of US$447 billion in 2011 (Theodora 2012). The oil palm industry has become a major agricultural activity in Malaysia in the last 50 years and achieved an annual foreign exchange earnings of about RM62.5 billion (approx. US22 billion in 2008 (Basiron 2009). The planting of oil palm began in Malaysia in the early 1960's when companies found that oil palm yielded better returns than rubber. The planting of oil palm was soon implemented on a massive scale which eventually became the vehicle to eradicate rural poverty (Basiron and Chan 2004). The government's three rural development agencies are Federal Land Development Authority (FELDA), Federal Land Consolidation and Rehabilitation Authority (FELCRA) and Rubber Industry Smallholders' Development Authority (RISDA). These agencies are responsible for planting oil palm in large areas of land that were rehabilitated or newly opened (Basiron and Chan 2004; Basiron 2009).

Malaysia is currently the second largest producer of palm oil in the world after Indonesia (refer to Figure 1 below).

Figure 1: World producer of palm oil



Source: FAOSTAT (2010)

Palm oil is a food source that feeds some 3 billion people in 150 countries (Man et al. 2009). A total of 145 million tonnes of oils and fats were produced in 2007 and it is predicted that in 2050, the world population is estimated to be approximately 9.2 billion (Man et al. 2009). This means the demand for palm oil would be more likely between 120 and 156 million tonnes and an additional area of land to produce 12 million tonnes of palm oil plantation could be required to meet this demand (Corley 2009). Malaysia's total export of palm oil products in 2011 is 24.27 million tonnes with a total export earnings of RM80.41 billion in 2011 (MPOB 2011). The rapid growth in the bio-ethanol and bio-diesel markets is placing an increasing demand on key agricultural commodities causing the price to rise in the international market. Palm oil is therefore a lucrative industry and palm oil producing countries are benefiting from the high demand and price of palm oil.

1.1.3 Social and environmental issues affecting the oil palm industry in Malaysia

There are three main environmental issues affecting the oil palm industry in Malaysia. First, the conversion of primary and logged forests to oil palm plantations which has resulted in a loss of biodiversity (McMorrow and Talip 2001; Wilcove and Lian 2010). Second, the emission of greenhouse gas (GHG) caused by the use of biomass for renewable energy sources (Yusoff 2006; Sumathi, Chai, and Mohamed 2008; Wicke et al. 2008; Man et al. 2009). Third, the palm oil mill effluent (POME) which is highly polluting if it is not treated (Wu et al. 2009).

Malaysia is criticised for converting forest lands to oil palm plantations which according to reports had resulted in a loss of biodiversity (Lian and Wilcove 2008; Fitzherbert et al. 2008; Man et al. 2009). The loss of forest has become a threat to biodiversity as Malaysia is the home to 10% of all known plant species and 256 of the 390 Dipterocarp species in Southeast Asia and faces the threat of global extinction (McMorrow and Talip 2001). Dipterocarp species is a family of tropical hardwood trees found mainly on the island of Borneo where the two Malaysian states of Sabah and Sarawak are located (Rainforestjournal 2013). Oil palm agriculture is spreading in Southeast Asia for three main reasons; firstly, oil palm is a profitable crop (Lian and Wilcove 2007); secondly, palm oil is used in many products; and thirdly, the biggest market for palm oil, India and China are reluctant to buy certified palm oil - certified by Roundtable of Sustainable Palm Oil (RSPO), a global, multi-stakeholder initiative on sustainable palm oil - because it is 8-15% more expensive (RSPO 2010). In these respects therefore, it is likely Malaysia will continue to be a major supplier in the palm oil business.

In view of the world's energy crisis, palm oil has been considered because it is sustainable and economically feasible as a source of alternative energy (Yusoff 2006; Man et al. 2009). Palm oil bio-diesel is also found to be biodegradable and has significantly fewer emissions compared to petroleum based diesel when burned. Palm oil biomasses have been utilised to produce various types of value

added products such as bio-plastic, bio-compost and animal feedstock (Yusoff 2006). Palm oil also has the lowest carbon footprint when used as feedstock to produce bio-fuel. According to Man et al. (2009), the net CO_2 emission is considered zero when bio-fuel is used as an energy source.

However, in a study done in North Borneo, in order for bioelectricity and biodiesel to be sustainably used from palm oil, palm oil production should only take place on degraded land (Wicke et al. 2008). This can achieve emission reductions of 150% or more and can turn oil palm plantations into carbon sinks, based on the *Cramer Commission* methodology for GHG calculations.

During the processing of palm oil, the by-products and wastes produced by palm oil mill effluent (POME) are a concern. The oil palm industry produces POME at three times the quantity of crude palm oil (Wu et al. 2009). POME, a thick brownish liquid, contains very high amounts of total solids, oil and grease, BOD (biochemical oxygen demand) and COD (chemical oxygen demand) (Ahmad, Ismail, and Bhatia 2003). POME is a highly polluting effluent and its disposal would become a problem if it is not treated properly, especially when the untreated effluent is discharged into rivers. According to Wu et al. (2009), the largest pollution load into the rivers in Malaysia comes from the oil palm industry.

1.2 ENVIRONMENTAL DISCLOSURE

Disclosure provides transparent information to regulators, shareholders, investors, and other stakeholders on how companies are treating the environment. Environmental disclosure is the "set of information items that relate to a firm's past, current and future environmental management activities and performance" and "information about the past, current and future financial implications resulting from a firm's environmental management decisions or actions" (Berthelot, Cormier, and Magnan 2003, 2). Voluntary environmental disclosure is environmental disclosure not mandated by regulators. Worldwide, voluntary environmental and corporate responsibility reports have grown from 27

published in 1992 to 1,970 published in 2005 (Corporateregister 2012). This upward trend suggests that reporting companies believe there are benefits to voluntarily disclosing environmental information.

These voluntary environmental reports do not contain a standard set of information. Disclosures vary in terms of content and information. There are concerns that companies may use environmental publications primarily to enhance their image (Beets and Souther 1999; Lydenberg 2005). This tactic known as "green washing" is the use of environmental disclosure as "exercises in public relations rather than environmental responsibility" (Beets and Souther 1999, 133).

1.3 ENVIRONMENTAL DISCLOSURE IN MALAYSIA

Prior studies reveal that demands for environmental disclosure are country specific because of the varying demands for environmental disclosure in different cultures (Kent and Chan 2009). In Malaysia, prior research has found that public-listed companies (PLCs) generally have low levels of CSR awareness/reporting (Ramasamy and Hung 2004; Keng, Roper, and Kearins 2007; Ghazali 2007; Othman and Ameer 2010; Asria 2010). Despite this, the number of companies reporting on environmental performance increased from 25 companies in 1999 to 60 in 2003 representing 5.4% of companies listed in the Bursa Malaysia main board in 1999 to 10% in 2003 (ACCA 2005). In a questionnaire survey carried out in late 2006 and early 2007, the most cited reasons for companies not to provide voluntary disclosure is their fear of releasing too much information to their competitors (Ghazali 2009).

In 2005, Malaysia adopted its own sustainability guidelines based on the Global Reporting Initiative (GRI) sustainability framework called 'Sustainability Reporting Guidelines for Malaysian Companies' (ACCA 2005). The legal and regulatory framework for financial reporting in Malaysia is governed by the Companies Act 1965, accounting standards approved by the Malaysian Accounting Standards Board (MASB) and the Bursa Listing Requirements. There are no specific standards

issued by the MASB or under the Companies Act 1965 requiring disclosure of environmental information to the public. However, Paragraph 9.02 (1) of the Bursa Securities Listing Requirements requires that listed companies " … disclose to the public all material information necessary for informed investing and take reasonable steps to ensure that all who invest in its securities enjoy equal access to such information" (Bursamalaysia 2012).

Malaysia is therefore an ideal setting for environmental research on voluntary disclosure. It is against this backdrop that this study is motivated to answer the following research question.

1.4 RESEARCH QUESTION

The key research question *is "Does company stakeholder power, strategic posture and economic performance influence environmental disclosure of oil palm companies in Malaysia?"* This study uses Ullmann (1985) three-dimensional stakeholder model to examine the association of stakeholder power, strategic posture and economic performance to environmental disclosure.

The first dimension, stakeholder power is the ability of stakeholders to influence corporate management. This is viewed as a function of the stakeholder's degree of control over resources required by the company (Ullmann 1985). Stakeholder demands therefore, are more likely to be addressed by corporate management if their resources are critical for the company's continued existence and viability (Roberts 1992).

The second dimension, strategic posture (or simply strategy), is how corporate management responds to stakeholder's social demands and a distinction is made between active and passive strategic posture (Ullmann 1985). When company management continuously tries to monitor what stakeholders are thinking about the company's social responsibility and undertakes social responsibility activities, they possess an active posture. Social responsibility activities include activities like

donations for wildlife protection, joint venture environmental or wildlife programmes with NGOs such as the World Wildlife Fund, public awareness campaigns regarding environmental issues, and so on. If a company's management is not monitoring its status with important stakeholders and not developing social programs to address stakeholder influence, then the company is seen to possess a passive strategic posture (Ullmann 1985). Therefore, an active strategic posture would mean that the organisation/company is likely to carry out more social or environmental responsibility activities and disclosures, than if the strategic posture is passive.

The model's third dimension, economic performance concerns the profitability of a company and thus the ability of the company to undertake costly social responsibility activities (Ullmann 1985; Roberts 1992; Kent and Chan 2009). Satisfying social responsibility may not be a priority compared to satisfying economic demands that affects the continued viability of the company (Ullmann 1985), especially during periods of depressed economic performance.

This model proposes that stakeholder power, strategic posture and economic performance influence the company's environmental responsibility activities and disclosure.

The study also seeks to determine the extent of environmental disclosure by Malaysian oil palm and non-oil palm companies and to determine the drivers of and impediments to environmental disclosure from the perspective of oil palm company managers.

This quantitative study involves multiple data source approaches to data collection in order to enhance the validity of the findings and to uncover environmental information of non-PLCs/government agencies whose annual reports are not generally accessible to the public. This study therefore will utilise semi-structured interviews and questionnaire surveys to obtain additional environmental disclosure information.

1.5 RESEARCH OBJECTIVES

In order to answer the research question, this study will focus on the following research objectives:

1. To examine the association of stakeholder power, strategic posture and economic performance (based on Ullmann's three-dimensional stakeholder model) and environmental disclosure in Malaysian oil palm companies.

2. To determine the extent of environmental disclosure of Malaysian oil palm and non-oil palm companies.

3. To determine the drivers of and impediments to environmental disclosure from the perspective of oil palm company managers.

In order to achieve Objective 1, an environmental disclosure model, adopted from Ullmann's (1985) stakeholder model is used to examine the association of stakeholder power, strategic posture and economic performance (independent variables) to environmental disclosure (dependent variable) on 33 matched oil palm PLCs and 33 non-oil palm PLCs. Measurement for the proxy variables for stakeholder power, strategic posture and economic performance will be determined from company annual reports and the dependent variable (environmental disclosure) will be measured using a ten-point-scoring of environmental disclosure factors.

Objective 2 investigates the extent of environmental disclosure of oil palm PLCs and non-oil palm PLCs and utilises the data collected above. Prior studies (Deegan and Gordon 1996; Jaffar, Iskandar, and Muhamad 2002; Kent and Chan 2009) have shown that environmentally sensitive industries provide more environmental disclosures to deter government sanctions. Williams (1999) found that voluntary disclosure varied significantly between countries in the Asia-Pacific region and voluntary disclosures are related to cultural factors, political and civil

systems of the countries understudy. A single country and single industry study seeks to control for these factors.

Objective 3 examines the motivating factors and the impediments to environmental disclosure from the perspective of oil palm managers, being the management that implements the company's strategy in response to key stakeholders demand for environmental disclosure. The drivers and impediments to environmental disclosure are sought from interviews and survey responses.

1.6 SIGNIFICANCE OF RESEARCH

Firstly, this study attempts to build on our limited understanding of the drivers of environmental disclosure. It does this through testing the robustness of Ullmann's stakeholder model in a high pollution single industry in a developing country. Prior studies (Roberts 1992; Al-Tuwaijri, Christensen, and Hughes II 2004; Magness 2006; Husillos and Álvarez-Gil 2008; Kent and Chan 2009; Elijido-Ten 2009) have used Ullmann's stakeholder model to examine voluntary disclosure in developed countries, with the exception being Elijido-Ten (2009) whose study examined voluntary disclosure in Malaysia, a developing country. Roberts (1992) applied Ullmann's stakeholder theory to social responsibility in general and the rest of the studies examined environmental reporting of PLCs across many business sectors.

Secondly, disclosures are examined in a country that offers a non-transparent setting for environmental reporting. It is expected that demands for environmental information are country specific because of the varying demands for environmental information in different cultures (Kent and Chan 2009). While prior studies conducted in Malaysia used mainly content analysis to examine disclosure, this study will add to the literature by using interviews and questionnaire survey to confirm or otherwise the results from the annual reports environmental disclosure.

Thirdly, almost all prior studies were in public listed companies in industries with dispersed ownership. This study examines an industry where government is the substantial owner/shareholder and key stakeholder, a strong feature in the Malaysian palm oil sector (Ghazali 2007).

Fourthly, the drivers and impediments to voluntary disclosures are examined in non-public listed oil palm companies which could bridge the information gap in this environmentally sensitive industry. Previous research in Malaysia has almost exclusively targeted listed companies.

Finally, the study seeks to determine the relative importance of stakeholders and other influences on the decisions of managers to disclose environmental information. Prior studies have generally concentrated on a list of previously researched stakeholders (owners, creditors, government, customers, etc.) on the assumption that these were the main drivers of disclosure.

1.7 CHAPTER ORGANISATION

This chapter has introduced the background, objectives and significance of the study together with the research question from which a model will be developed.

The remainder of the thesis is organised as follows:

Chapter 2 discusses the evolution of sustainability reporting beginning with *The Brundtland Report*. Next, it presents the GRI sustainability reporting guidelines as a comprehensive guide to sustainability reporting to ensure quality of reported information. This is followed by a discussion on the research into voluntary disclosure including trends in sustainability reporting. Voluntary disclosure in the context of corporate social responsibility and environmental reporting are also covered, including the value and reliability of voluntary reporting. Finally, this chapter discusses the development of voluntary reporting in the Malaysian setting.

Chapter 3 presents the development of hypotheses to test the influence of stakeholder power, strategic posture and economic performance on the extent of environmental disclosure in Malaysian oil palm companies. It discusses 4 theoretical perspectives; Legitimacy Theory, Stakeholder Theory, Institutional Theory and Agency Theory that have been adopted by a number of researchers in recent years to study voluntary disclosure. Hypotheses are drawn from the three-dimensional model introduced by Ullmann (1985). A modified version of Ullmann's contingency framework is also presented to explain the extent of voluntary disclosure based on various situations.

Chapter 4 discusses the research methodology employed in the study and data analysis and results of the annual reports environmental disclosure (Phase 1). This chapter analyses the annual reports of 33 oil palm (OP) PLCs and 33 non-oil palm (NOP) PLCs over 5 years of data (2005-2009). Regression analysis is applied to examine the association of stakeholder power, strategic posture and economic performance to environmental disclosure for the 2 groups of companies.

Chapter 5 discusses the data analysis and results for the semi-structured interviews (Phase 2). The field study process includes sample selection, data collection and data analysis of 7 face-to-face interviews conducted for two purposes: 1) to assist in designing and refining the survey instrument; and 2) as an exploratory study to solicit environmental information from oil palm non-PLCs and government agencies whose annual reports are not available to the public. The results of this phase of the research will provide insight from oil palm senior managers regarding '*the drivers of and impediments to environmental disclosure*' (Objective 3).

Chapter 6 presents the questionnaire survey. In Malaysia, social and environmental reporting is voluntary and the majority of oil palm companies are non-PLCs whose annual reports are not accessible to the public. It is against this backdrop that the questionnaire is employed to obtain useful information to

achieve the research objectives. The main objective of this survey phase is to gain further insight from oil palm senior managers regarding '*the drivers of and impediments to environmental disclosure*'. In the discussion section of this chapter, the results obtained from the annual reports environmental disclosure, semi-structured interviews and questionnaire survey phases are integrated for the purpose of triangulation.

Chapter 7 provides a summary of the research. An overview of the research process and findings is followed by an account of its theoretical and practical contributions. The limitations of the study are discussed and finally, several opportunities for future research are detailed.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter commences with a discussion of the evolution of sustainability reporting beginning with The Brundtland Report. Next, it presents the GRI sustainability reporting guidelines as a comprehensive guide to sustainability reporting to ensure quality of reported information. This is followed by a discussion of research into voluntary disclosure including the trend in sustainability reporting. Voluntary disclosure in the context of corporate social responsibility and environmental reporting is also discussed including the value and reliability of voluntary reporting. Finally, this chapter discusses the development of voluntary reporting in the Malaysian setting.

2.2 SUSTAINABILITY REPORTING

There has been much discussion about the impact of development on the environment and humankind since the 1970s. A report initiated by the United Nations entitled Our Common Future (also known as The Brundtland Report) presented in 1987 by the World Commission of Environment and Development (UN 1987) was an important step in bringing about the agenda of sustainability among governments and international businesses (Deegan 2009, 1266). The main objective of the report is to produce a "global agenda for change" to alleviate pressures on the global environment which are considered unsustainable (Deegan 2009, 1266).

Following The Brundtland Report, the 1992 Earth Summit placed the issue of sustainable development on the international front, attracting considerable media attention. Agenda 21 (UN 1992) was an outcome of the Earth Summit and

considered an action plan for the 21st century. Sustainability then became an important consideration for both on-going national and international development. In 1992 also, the European Union (EU) released a document entitled Towards Sustainability which suggested the accounting profession play a role in implementing costing systems to include environmental costs.

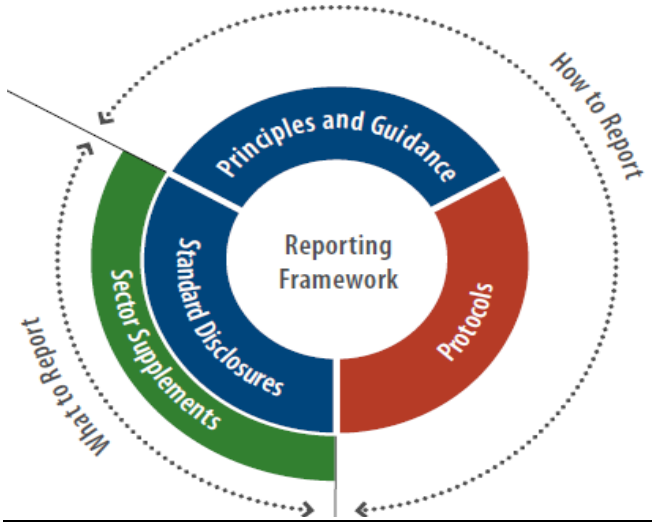
In 2002, a set of guidelines termed the Sustainability Reporting Guidelines was developed by a broad group of organisations named the Global Reporting Initiative (GRI) for the purpose of processing social and environmental impact of an organisation's operations (Deegan 2009, 1294). It is from this GRI guideline that governments and corporations in the world have largely adopted/adapted as a basis to develop their own sustainability reporting principles.

2.2.1 GRI sustainability reporting guidelines

"Sustainability reporting is the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organisational performance towards the goal of sustainable development" (GRI 2011, 3).

Figure 2.1 below shows the GRI reporting framework which consists of the principles and guidance for reporting and standard disclosures which makes up the performance indicators and other disclosure items, and their associated indicator protocols. It is designed for use by any organisation of any size, sector or location.

Figure 2.1: The GRI reporting framework



Source: GRI (2011, 3)

The Guidelines draw on the accepted three-dimensional (economic, environmental and social) definition of sustainability using a series of performance indicators, as well as a set of integrated indicator protocols (GRI 2011) – refer to Table 2.1 below.

Table 2: GRI framework for management approach and performance indicators

Reporting principles		Report content	Dimension	Category	Aspect
Report content	**Report quality**				
Materiality	Principles of blalance	Strategy & analysis	Economic	Economic	Economic performance
Stakeholder inclusiveness	Comparability	Report parameters			Market presence
sustainability context	Accuracy	Governance			Indirect economic impacts
completeness	Timeliness	Commitments & engagement			
	Reliability	Management approach	Environmental	Environmental	Materials
	Clarity				Energy
					Water
					Biodiversity
					Emissions, effluents, and waste
					Products and services
					Compliance
					Transport
					Overall
			Social	Labour practices	Employment
				and decent work	Labour/management relations
					Occupational health and safety
					Training and education
					Diversity and equal opportunity
					Equal remuneration for women and men
				Human rights	Investment and procurement practices
				performance	Non-discrimination
					Freedom of association and
					collective bargaining
					Child labor
					Forced and compulsory labor
					Security practices
					Indigeneous rights
					Assessment
					Remediation
				Society	Local communities
					Corruption
					Public policy
					Anti-competitive behaviour
					Compliance
				Product responsibility	Customer Health and Safety
					Product and Service Labeling
					Marketing Communications
					Customer Privacy
					Compliance

Source: Adapted from GRI (2011)

2.2.2 Trends in sustainability reporting

Based on the study by Kolk, there has been a significant rise in sustainability reporting (Kolk 2004). Her analysis was conducted based on KPMG surveys of sustainability reporting of 100 largest companies in 11 countries which span from 1993 to 2002.

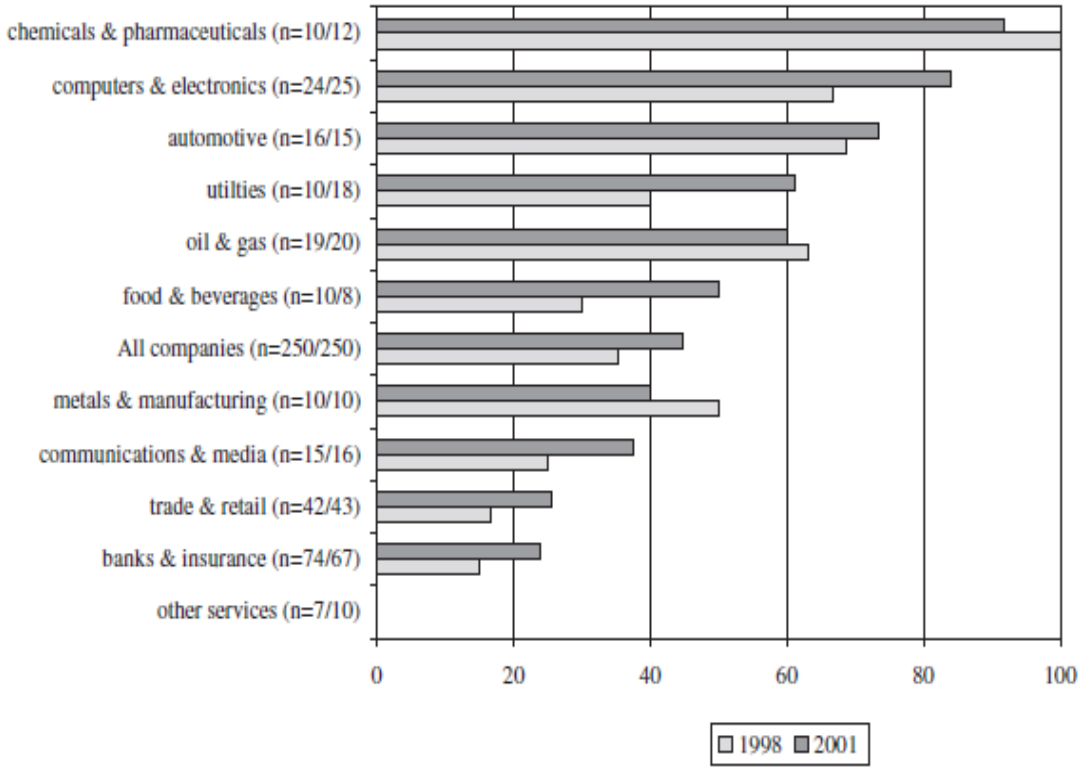
Among the reasons for reporting are: “enhanced ability to track progress against specific targets”; ”facilitating the implementation of the environmental strategy”; ”greater awareness of broad environmental issues throughout the organisation”;

and “ability to clearly convey the corporate message internally and externally” (Kolk 2004, 54).

Among the reasons for non-reporting are: “doubts about the advantages it would bring to the organisation”; “competitors are neither publishing reports”; “customers (and the general public) are not interested in it, it will not increase sales”; and “the company already has a good reputation for its environmental performance” (Kolk 2004, 54).

In another study by Kolk, there is a rising trend in non-financial reporting based on a survey of Global Fortune 250 companies based on the years 1998 and 2001 (Kolk 2003). This increase is reflected at the sector level (refer to Figure 2.2 below), most notably in computers & electronics, utilities, food & beverages, communications & media, trade & retail and banks & insurance.

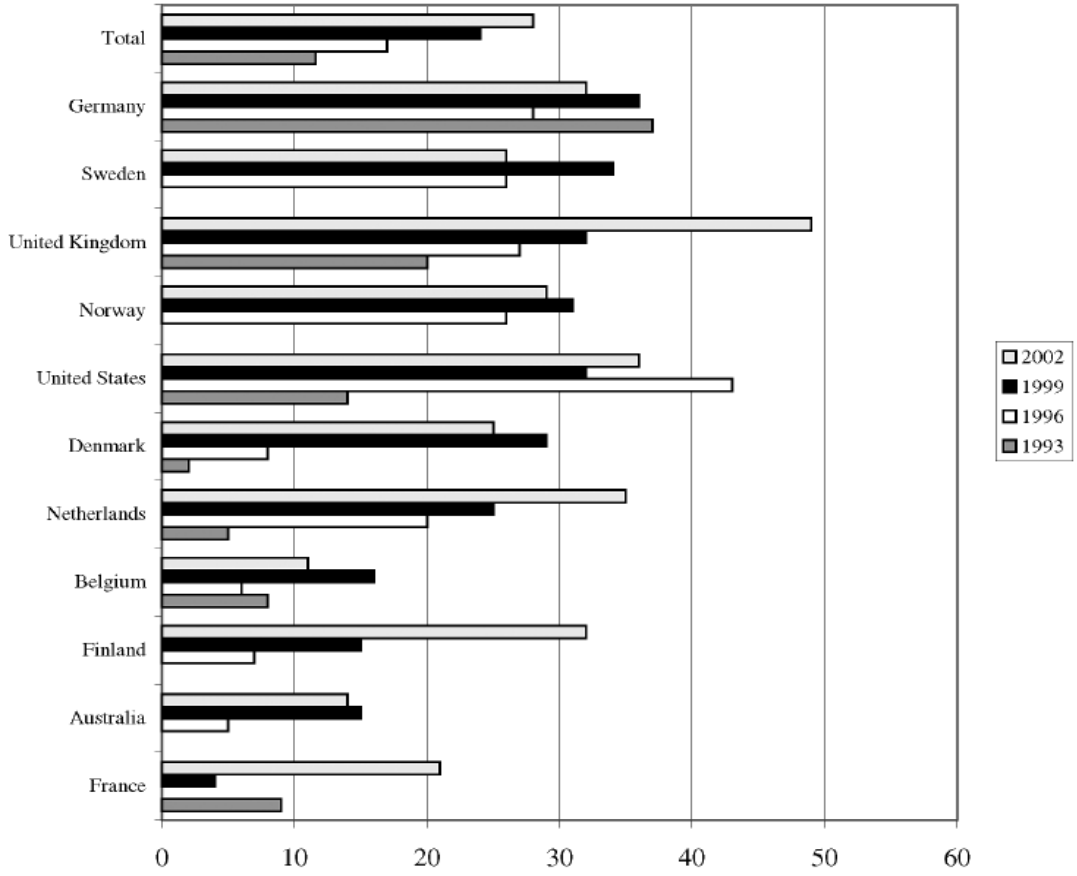
Figure 2.2: Sustainability reporting percentages (1998 and 2001) of the Global Fortune 250 companies in the largest sectors



Source: Kolk (2003, 281)

The increasing trend in sustainability reporting is also evident at the country level (refer to Figure 2.3 below). The highest growth in reporting has taken place in the United Kingdom, the Netherlands, Finland and France.

Figure 2.3: Sustainability reporting in 11 countries in 1993, 1996, 1999, 2002 (in %)



Source: Kolk (2004, 52)

2.2.3 Sustainability reporting and voluntary disclosure

Since the early 1990s, there has been a rise in the number of companies engaging in sustainability reporting (Deegan and Gordon 1996; Kolk 2003, 2004). According to Berthelot, Cormier, and Magnan (2003), this is due mainly to issues of global warming and the potential impacts of ecological accidents such as chemical leaks, raising society's awareness and concern for the environment. This has resulted in significant tightening of environmental legislation by most Western countries,

with accounting regulators getting involved through several initiatives (Berthelot, Cormier, and Magnan 2003) and subsequently, the growing demand for public disclosure of how companies are fulfilling their social and environmental obligations (Deegan 2009, 1270).

While sustainability reporting is normally done on a voluntary basis, in countries such as Denmark, Norway, Sweden and The Netherlands, this form of reporting has already become mandatory (Brueckner 2010). Similarly, regulations adopted in France in 2001 require listed companies to include detailed social and environmental information in their annual reports. The government of countries like Japan, Korea and Denmark have environmental reporting guidelines (Slater and Gilbert 2004). In the US, Item 103 of SEC Regulation S-K requires registrants of the SEC to disclose the material effects of that compliance on the capital expenditure and earnings of the reporting company with Federal, State and local environmental laws (Slater and Gilbert 2004). In Australia, sustainability reporting has both mandatory (S299, Corporations Act 2001; S516, EPBC Act 1999) and voluntary elements (Voluntary Public Reporting – PER) (Burritt 2002).

Figure 2.4 below shows the government reporting requirements and initiatives by country**.**

Figure 2.4: Overview of government environmental reporting requirements and explicit encouragements

Country/region	Reporting legislation	Related legal requirements	Government encouragement
Netherlands	• publication of environmental report		
Germany			• explicit support for EMAS (voluntary) (which includes compulsory environmental reporting)
UK			• threats and appeals to publish environmental reports • environmental reporting guidelines (Department of Environment) • transparency requirement for privatized firms
France	• reporting on environmental and social issues		
EU		• pollutant emission register for large companies (in force in 2003)	• EMAS (voluntary) • recommendation on environmental and social disclosure in annual reports
Japan		• emission inventory (under consideration)	• guideline for environmental reporting (Ministry of the Environment) • guideline for environmental performance indicators (Ministry of the Environment) • environmental accounting guidebooks (Ministry of the Environment) • environmental reporting guidelines (Ministry of Economy, Trade and Industry)
US		• Toxic Release Inventory • SEC disclosure requirements	
South Korea		• SEC disclosure requirements	

Source: Kolk (2003, 286)

2.2.4 Voluntary disclosure strategies

Dye (2001, 186) says that "any entity making a disclosure will disclose information that is favourable to the entity and will not disclose information unfavourable to the entity." Verrecchia (1983) comments that a manager's decision to disclose or withhold information depends upon the effect of that decision on the price of a risky business. Schrand and Walther (2000) find that managers strategically lower the benchmark of the prior period of earnings against the current-period earnings.

This would mean that the change in the net income over the comparable period is more favourable. Surprisingly, investors do not verify the prior period information but use the benchmark provided in the earnings announcement to evaluate current earnings.

A study by Miller (2002) reveals that when firms' earnings decline, they may shift disclosure focus from long-term to short-term forecasts. This strategy takes away the focus on the current negative news to avoid discussion of long-term decline. The market does not see through the change in the forecast time horizon and does not adjust its expectations.

In Clatworthy and Jones (2003), companies attribute good news to their own actions and bad news to external factors. In Aerts (2005), the study reveals that self-serving tendencies in attributable behaviour is counter intuitive from an informational perspective when firms selectively direct focus so that positive effects will be reinforced and negative effects will be corrected. Regardless of performance, companies emphasise positive outcomes.

The above studies imply that companies try to manage investors' perceptions. Evidence also shows that investors have limited memory and information processing power so the manipulation attempts could be successful (Hirshleifer and Teoh 2003; Hobson and Kachelmeier 2005; Krische 2005).

Prior studies further show that companies use voluntary disclosure to provide the market with useful information. The main effect of voluntary disclosure is reduced information asymmetry (Welker 1995; Botosan 1997; Verrecchia 2001). Recent studies providing similar evidence include Brown and Deegan (1998) who uses information embedded in the daily trading orders to capture degree of information asymmetry. They find that increasing the number of conference calls (voluntary disclosure) leads to lower probability of private information-based trading in the subsequent quarter.

In summary the literature on voluntary disclosure suggests that voluntary disclosure may provide both useful and misleading information to investors. When processing this type of information, investors need to be discerning and be able to discriminate useful information from noise.

2.3 ENVIRONMENTAL REPORTING

The public disclosure of the social and environmental impact of operations has become widespread among companies since the early 1990s when a number of large companies made considerable advances in reporting aspects of their environmental impact (Deegan 2009, 1302). Development of these practices tended to take the form of disclosures within the annual report and eventually a stand-alone sustainability report. According to Deegan (2009, 1302) another related term that has gained prominence is 'triple bottom line reporting' which is a means to provide information that enables report readers to assess how sustainable an organisation's operations are. The perspective taken is that for an organisation to be sustainable, it must be financially secure, it must minimise its negative environmental impacts and it must act in conformity with societal expectations or lose its 'community licence to operate'.

Social and environmental reporting is therefore a voluntary process given the lack of regulation in the area. Despite the lack of regulation, many organisations publicly release information about their social and environmental performance which leads us to question why companies adopt particular operating and reporting strategies.

2.3.1 Voluntary environmental disclosure

Berthelot, Cormier, and Magnan (2003, 2) defines corporate environmental disclosure as the "set of information items that relate to a firm's past, current and future environmental management activities and performance." This information

can take many forms: qualitative statements; quantitative facts; assertions; and financial statements' figures or footnotes.

Research on environmental disclosure has focused primarily on information in annual reports and 10Ks, which are a mix of mandatory and voluntary disclosure. Prior studies on the relationship between corporate environmental performance and environmental disclosure have been mixed. Early studies suggest that environmental disclosure may have no relationship with environmental performance, a measure of reliability of environmental disclosure (Ingram and Frazier 1980; Wiseman 1982; Freedman and Wasley 1990; Fekrat, Inclan, and Petroni 1996). In these studies, disclosure scores were generated using a content analysis and environmental performance measured by the rating issued by the Council on Economic Priorities (CEP). Fekrat, Inclan and Petroni (1996) found significant variations among companies in different countries and industries on the quantity of information disclosed in environmental reports forming part of the annual report. The quantity of disclosure also does not seem to correlate with their environmental performance.

Patten's (1992) study reveals a significant negative relationship between environmental performance and environmental disclosure for a sample 131 US companies when measured by the level of toxic gas released into the environment. Similarly in Hughes, Anderson, and Golden (2001), they find that poor performers make the most disclosures. This is because the FASB and SEC require that contingent liabilities from environmental remediation are to be disclosed. More remediation are therefore expected of poor environmental performers and hence, more environmental disclosure.

In contrast, Bewley and Li (2000) found that companies with high pollution propensity, more political exposure and more media coverage are more likely to disclose environmental information. Al-Tuwaijri, Christensen, and Hughes (2004) also found that extensive environmental disclosure is associated with good environmental performance and good economic performance. Using the GRI

sustainability reporting guidelines to assess voluntary disclosure, Clarkson et al (2006) found a positive association exist between environmental performance and levels of environmental disclosure. They explained that the mixed results on the association between environmental performance and level of environmental disclosure in prior studies are a result of combining mandatory and voluntary disclosure in the assessment.

A significant literature reveals that environmental disclosures can assist in managing an organisation's relationship with the relevant public by the shaping of external perceptions (Berthelot, Cormier, and Magnan 2003; Magness 2006). In Deegan and Rankin (1996), prosecuted firms reveal more environmental information after the lawsuits than firms that are not prosecuted - a strategy aimed at managing public impressions. Environmental disclosures influence the public image of the organisation and its activities (Neu, Warsame, and Pedwell 1998). As such, industries that attract a large amount of media attention are associated with higher levels of environmental disclosure (Brown and Deegan 1998; Neu, Warsame, and Pedwell 1998; Bewley and Li 2000; Cormier and Magnan 2003).

In several studies, such as Deegan and Gordon (1996) and Niskanen and Nieminen (2001), firms' environmental disclosure practices are self-laudatory as they highlight the positive aspects of their environmental performance and fail to disclose the negative aspects. This type of environmental disclosure behaviour may fall into the category of "greenwashing." The practice tries to paint an environmentally friendly image for a company, and it passes on little verifiable information about actual environmental performance (Beets and Souther 1999).

However, evidence shows that some companies provide useful environmental information in their annual reports and/or 10Ks (Belkaoui 1976; Barth, McNichols, and Wilson 1997; Li and McConomy 1999). Environmental liabilities and environmental expenditure affect investors' judgments regarding a company's profitability potential, and the knowledge of environmental performance

facilitates the estimation of financial implications from environmental activities (Barth, McNichols, and Wilson 1997; Cormier and Magnan 1997; Clarkson, Li, and Richardson 2004; Hughes II 2000).

2.3.2 Value of environmental disclosure

Most studies find that environmental disclosure have a positive effect on the market returns of stock price (Anderson and Frankle 1980; Freedman and Stagliano 1991; Blacconiere and Patten 1994; Patten and Nance 1998).

Prior research has also found that voluntary disclosure lowers agency costs (Jensen and Meckling 1976; Chow and Wong-Boren 1987), reduces capital cost (Choi 1973; Foster 1986; Diamond and Verrecchia 1991; Lev 1992) and improves the market price of securities (Fishman and Hagerty 1989).

In Anderson and Frankle (1980), they find that socially disclosing portfolios consistently outperform non-disclosing portfolios. The findings indicate that the market positively values social information.

A study by Blaconniere and Patten (1994) reveals that the market values of other firms in similar industries are affected following a chemical leak in Bhopal, India in 1984. However, companies with more environmental disclosures experienced a less negative reaction compared to companies with less extensive disclosures. This result suggests that investors interpret disclosures as a positive sign that the firm is managing its exposure to future regulatory costs.

In a similar study by Patten and Trompeter (2003), a further examination of the chemical firms' reactions to the Bhopal accident reveals that companies disclosing high levels of environmental information prior to the chemical leak incident had less negative voluntary accruals. This is consistent with the argument that corporate management uses environmental disclosure as a tool for reducing potential regulatory costs and as a strategy for dealing with political pressure.

These studies suggest that environmental information has information content and is therefore valuable to the market.

2.4 ENVIRONMENTAL REPORTING IN MALAYSIA

Prior studies also reveal that demands for environmental disclosure are country specific because of the varying demands for environmental disclosure in different cultures (Kent and Chan 2009). In Malaysia, prior research has found that public-listed companies (PLCs) generally have low levels of CSR awareness/reporting (Ramasamy and Hung 2004; Keng, Roper, and Kearins 2007; Ghazali 2007; Othman and Ameer 2010; Asria 2010). Despite this, the number of companies reporting on environmental performance increased from 25 companies in 1999 to 60 in 2003 representing 5.4% of companies listed in the Bursa Malaysia main board in 1999 to 10% in 2003 (ACCA 2005). However, the latest CSR status report (Bursamalaysia 2006) indicated that most PLCs in Malaysia demonstrated a lack of knowledge and awareness of CSR and fall behind international best practices in CSR.

In 2005, Malaysia adopted its own sustainability guidelines based on the Global Reporting Initiative (GRI) sustainability framework called 'Sustainability Reporting Guidelines for Malaysian Companies' (ACCA 2005). The legal and regulatory framework for financial reporting in Malaysia is governed by the Companies Act 1965, accounting standards approved by the Malaysian Accounting Standards Board (MASB) and the Bursa Listing Requirements. There are no specific standards issued by the MASB or under the Companies Act 1965 requiring disclosure of environmental information to the public. However, Paragraph 9.02 (1) of the Bursa Securities Listing Requirements requires that listed companies " … disclose to the public all material information necessary for informed investing and take reasonable steps to ensure that all who invest in its securities enjoy equal access to such information" (Bursamalaysia 2012).

Other studies on environmental reporting includes Ahmad, Hassan, and Mohammad (2003), Yusoff, Yatim, and Nasir (2004), Yusoff, Lehman, and Nasir

(2006), Yusoff, Yusoff, and Lehman (2007) and Elijido-Ten (2009). These studies focused on the status (extent of disclosure and items of disclosure) of reporting, trends in reporting, motivations for disclosure or reasons for non-disclosure and factors influencing environmental reporting by Malaysian public listed companies.

2.5 SUMMARY

While there have been many surveys describing the extent of voluntary environmental disclosure across industries and countries, the exact drivers of that disclosure remains contentious (Berthelot, Cormier, and Magnan 2003). On balance, prior research suggests that environmental disclosure is value relevant and this explains why many companies and organisations are voluntarily disclosing the environmental impact of their operations to the wider public.

Despite the value relevance to investors, prior studies report inconsistent results on the relation between environmental disclosure and environmental performance. This may be partly due to different guidelines adopted when measuring environmental disclosure or performance. It may also reflect the inadequate measurement of both disclosure and environmental performance.

A number of gaps in the literature are therefore noted. Firstly, that no theoretical basis has been established for assessing the drivers of voluntary environmental disclosure in company annual reports. Secondly, that cultural issues appear to impact on results, with substantially different outcomes being reported between countries. Thirdly, that the measurement of both voluntary disclosure and the independent variables are inconsistent and may be leading to inconsistent results. Finally, there is minimal research into the relative importance of stakeholders and other influences on the decisions of managers to disclose environmental information.

In summary, the studies examined in this chapter recognise that voluntary disclosure will continue in the foreseeable future as global environmental

degradation continues to be a global concern and the disclosures have value relevance for various stakeholders.

Chapter Three will discuss the development of hypotheses using Ullmann's three-dimensional stakeholder model (Ullmann 1985) to examine the association of stakeholder power, strategic posture and economic performance on environmental disclosure in Malaysian oil palm companies.

CHAPTER 3

HYPOTHESES FORMULATION

3.1 INTRODUCTION

This study adopts stakeholder theory and uses Ullmann's (1985) three-dimensional stakeholder model to investigate the association of stakeholder power, strategic posture and economic performance on environmental disclosure in Malaysian oil palm companies.

This chapter commences with a discussion of Stakeholder Theory as the conceptual framework for this study, and following Ullmann's (1985) stakeholder model, develops an empirical model relating to environmental disclosure measurement. Finally, it presents the development of hypotheses for the variables tested in the environmental disclosure model.

3.2 CONCEPTUAL FRAMEWORK

3.2.1 Theories in support of voluntary reporting

A number of theories have been utilised to explain the extent of voluntary disclosures. Legitimacy Theory, Stakeholder Theory and Institutional Theory are three theoretical perspectives that have been adopted by a number of researchers in recent years. These theories focus on the role of information and disclosure in the relationship(s) between individuals and group (Gray, Owen, and Adams 1996).

Legitimacy Theory is concerned with social activities that management perceive are expected by the communities in which they operate. If the community no longer supports the management's operations then the entity will no longer be

considered legitimate (Patten 1992; Walden and Schwartz 1997; Neu, Warsame, and Pedwell 1998; Tsang 1998; Adams, Hill, and Roberts 1998). Studies using Legitimacy Theory to study social or environmental disclosure include Deegan, Rankin, and Tobin (2002), Haniffa and Cooke (2005), Magness (2006) and Ghazali (2007).

Stakeholder Theory, while similarly discussing the expectations of society it affects, focuses on particular groups within that society (Gray, Kouhy, and Laver 1995; O' Donovon 2002; Deegan (2002). In this respect therefore, Legitimacy and Stakeholder Theory overlap each other at the broader level but differ in focus. Studies which have used Stakeholder Theory to study social or environmental disclosure include Roberts (1992), Husillos and Álvarez-Gil (2008), Kent and Chan (2009) and Elijido-Ten (2009).

Institutional Theory focuses on organisational forms and practices that conform to what society considers 'normal' (Deegan 2009, 126). Organisations conform to social and institutional pressures for change in order to gain or retain legitimacy. DiMaggio and Powell noted a high degree of similarity between organisations when "powerful forces emerge that lead them to become more similar to one another" (DiMaggio and Powell 1983, 148). Institutional Theory therefore provides a complementary perspective to Stakeholder Theory and Legitimacy Theory in the study of voluntary reporting practices. Amran and Siti-Nabiha (2009) used Institutional Theory on the study of corporate social reporting in Malaysia.

Another theory that has been applied to the explanation of voluntary disclosure is Agency Theory, defined by Jensen and Meckling (1976, 308) as a "contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent." Agency costs are therefore incurred when the managers (agents) put self-interest over the shareholder (principals) interest. Studies which have used Agency Theory to study voluntary disclosure include

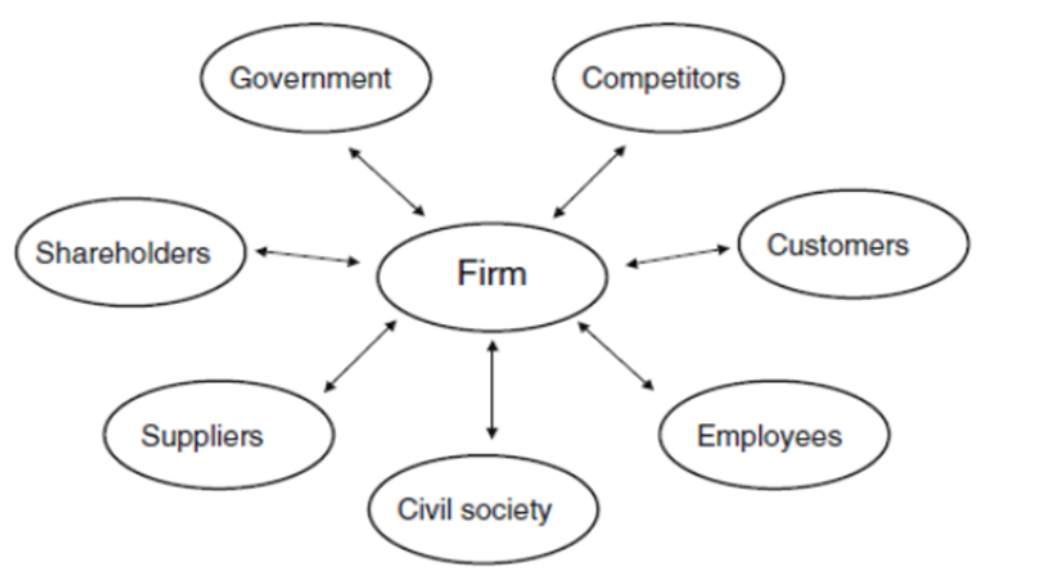
Chow and Wong-Boren (1987; Meek, Roberts, and Gray 1995; Hossain, Perera, and Rahman 1995; Watson, Shrives, and Marston 2002).

3.2.2 Stakeholder framework

A stakeholder approach to strategic management emerged in the mid-1980's and at its centre is Freeman's seminal work entitled 'Strategic Management: A Stakeholder Approach' (Freeman 1984). As Freeman observed, "Our current theories are inconsistent with both the quantity and kinds of change that are occurring in the business environment of the 1980's … A new conceptual framework is needed" (Freeman 1984, 5). Freeman's work became the cornerstone for the development of Stakeholder Theory and research involving stakeholder management.

According to Freeman, stakeholders are defined as "any group or individual who can affect or is affected by the achievement of the firm's objectives" (Freeman 1984, 46). Figure 3.1 below shows the most common version of Freeman's stakeholders on a non-exhaustive basis showing shareholders, government, employees, suppliers, customers, competitors and civil society as stakeholders of the firm (Freeman 1984, 25). Freeman's definition of stakeholder is too broad and could include anybody. For practical reasons, there is a need to refine this broad definition of stakeholders.

Figure 3.1: Freeman's stakeholder model

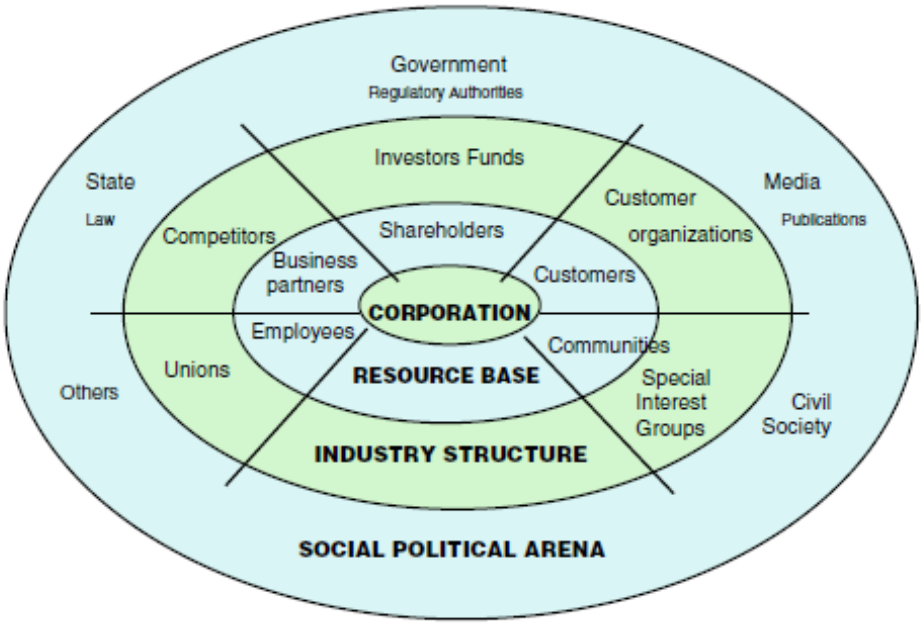


Source: Freeman (1984, 25)

Fassin (2009) refined Freeman's stakeholder model by classifying them into stakeholder, stakewatcher and stakekeepers. Stakeholders are shareholders, customers, business partners, employees, communities and the wider world. Stakewatchers are special interest groups, unions, customer organisations and competitors. Stakekeepers includes the government, media, civil society and others.

In Fassin's model, the stakeholders are affected by the firm and the firm is affected by the stakewatchers and the stakekeepers. No moral obligation is accorded to the stakewatchers and the firm is only morally obligated to the stakeholders. Deriving their power from their legitimacy, the stakewatchers' and stakekeepers' influence can be both beneficial and harmful because they can call firms to account (Phillips 2003).

Figure 3.2: Fassin's stake model



Source: Fassin (2009, 130)

In summary, Fassin (2009) stake model managed to capture the finer points suggested by proponents of stakeholder theory, such as Clarkson (1995) and Frooman (1999). According to Clarkson (1995), managers are accountable for fulfilling the company's responsibilities to its primary stakeholders and not with society as a whole. Frooman, on the other hand, believe that ''stakeholder theory must provide an account of how stakeholders try to act to influence the firm's decision making and, ultimately, the firm's behaviour'' (Frooman 1999, 192).

Freeman stated that "Building and leading a great company has always been managing for stakeholders" (Freeman 2010, 7). The real challenge for managers therefore is to meet multiple demands simultaneously. Freeman (2010) further stated that the process of value creation is about creating as much value as possible for stakeholders without short-changing any stakeholder. In stakeholder theory therefore, there exist a strong interdependence between the stakeholders and the company.

It is within the general definition of Stakeholder Theory adopted from Freeman (1984), Clarkson (1995), Freeman and McVea (2001), Fassin (2009) and Freeman (2010) that the conceptual framework of this research is framed.

Taking a cue from Fassin (2009) stake model, Stakeholder Theory is an appropriate base for this study because the oil palm industry has attracted many interested "stakeholders." According to Fassin (2009), even though the company is affected by the stakewatchers (such as special interest groups like NGOs, unions, customer organisations and competitors) and stakekeepers (such as the government, media, civil society and others), the company is only morally obligated to the stakeholders (shareholders, creditors, customers, employees, and so on).

3.3 ULLMANN'S FRAMEWORK: A MODEL FOR THIS STUDY

3.3.1 Ullmann's stakeholder model

An extensive study of prior research was conducted by Ullmann (1985) on the correlations among social disclosure, social performance and economic performance. He concluded that the results were inconsistent because the models were mis-specified, failing to take into account the element of strategy of the company (Ullmann 1985). Ullmann developed a three-dimensional model to attempt to explain almost all correlations between social disclosure, social performance and economic performance. It incorporates the elements of stakeholder power, strategic posture and economic performance (Ullmann 1985).

The first dimension pertains to stakeholder power where a company is seen to be responsive to the demands of a particular group of stakeholders. These are stakeholders with a high degree of control over resources needed by the company (Ullmann 1985) and the company, in turn, depends on them for their continued existence and viability (Roberts 1992). Stakeholder power is therefore positively correlated with voluntary disclosure, suggesting that voluntary disclosure depends

upon the demands made by the organisation's/company's key or important stakeholders for information. Therefore, if stakeholder power is high, the organisation/company will disclose more social or environmental information if that is what the key stakeholders desire, and vice versa.

The second dimension pertains to how corporate management responds to stakeholder's social demands and Ullmann calls this strategic posture (Ullmann 1985). When the company's strategic posture is active, there are constantly devising ways to address their social or environmental responsibilities, and vice-versa, if the strategic posture is passive. Companies possessing an active posture therefore undertakes more social or environmental responsibility activities, and conversely, if the strategic posture is passive.

The model's third dimension pertains to economic performance or the profitability of a company which could affect the ability of the company to undertake costly social or environmental responsibility activities (Ullmann 1985; Roberts 1992; Kent and Chan 2009). This suggests that during periods of depressed economic performance, satisfying economic demands take precedence over social or environmental responsibility demands (Ullmann 1985).

Ullmann also developed a contingency framework which can predict levels of corporate social responsibility (Ullmann 1985). This is shown in its original form in Figure 3.3 below. The only instance where both social performance and social disclosure is high is in Situation 1, when the dimensions of stakeholder power, strategic posture and economic performance are high. Other situations are a combination of high and low social performance and social disclosure. When the dimensions of stakeholder power, strategic posture and economic are all low, as in Situation 8, social performance and social disclosure are both low.

Figure 3.3: Ullmann's contingency framework

Situation	Stakeholder power	Strategic posture	Economic performance	Strategy
1	High	Active	Good	Social performance: high Social disclosure: high (mandatory and voluntary)
2	High	Active	Poor	Social performance: high Social disclosure: high regarding mandated matters, low regarding voluntary matters
3	Low	Active	Good	Social performance: low Social disclosure: high regarding mandated matters, low regarding voluntary matters
4	Low	Active	Poor	Social performance: low Social disclosure: low (mandatory and voluntary)
5	High	Passive	Good	Social performance: high Social disclosure: indeterminate regarding mandatory matters, low regarding voluntary matters
6	High	Passive	Poor	Social performance: indeterminate Social disclosure: indeterminate regarding mandatory matters, low regarding voluntary matters
7	Low	Passive	Good	Social performance: low Social disclosure: low (mandatory and voluntary)
8	Low	Passive	Poor	Social performance: low Social disclosure: low (mandatory and voluntary)

Source: Ullmann (1985, 553)

A modified version of Ullmann's framework is shown in Figure 3.4 below. This study does not include consideration of actual environmental performance so all references to social performance is excluded from the table.

Based on Ullmann's framework, the only situation where voluntary disclosure is high is when shareholder power, strategic posture and economic performance are high; any other combination therefore would result in low voluntary disclosure.

Figure 3.4: Ullmann's contingency framework adapted to environmental disclosure

Situation	Shareholder power	Strategic posture	Economic performance	Strategy
1	High	Active	Good	Voluntary disclosure high
2	High	Active	Poor	Voluntary disclosure low
3	Low	Active	Good	Voluntary disclosure low
4	Low	Active	Poor	Voluntary disclosure low
5	High	Passive	Good	Voluntary disclosure low
6	High	Passive	Poor	Voluntary disclosure low
7	Low	Passive	Good	Voluntary disclosure low
8	Low	Passive	Poor	Voluntary disclosure low

Source: Adapted from Ullmann (1985)

3.3.2 Prior studies adopting Ullmann's model

Ullmann (1985) framework had been operationalised by Roberts (1992) to measure the extent of CSR disclosure in general whereas Al-Tuwaijri, Christensen, and Hughes II (2004), Elijido-Ten (2007), Magness (2006), Husillos and Alvarez-Gil (2008), Kent and Chan (2009) and Elijido-Ten (2009) used Ullmann's framework to specifically examine environmental disclosure.

Roberts (1992) found that companies, when they are enjoying good environmental performance and employ an active strategic posture, make more voluntary disclosure if stakeholder power is high, consistent with Ullmann (1985).

In Kent and Chan (2009), they found that the manifestation of an active strategic posture is related to the production of environmental information. They found that their proxies for stakeholder power (shareholders and lobby groups) were significant and their proxies for strategic posture (social/environmental concern and environmental committee) were also significant.

Al-Tuwaijri, Christensen and Hughes II (2004) applied Ullmann's framework by using environmental performance, environmental disclosure and economic performances as endogenous variables. The findings of their study showed that there is an association between environmental performance, economic performance and environmental disclosure.

In Magness (2006), companies with an active strategic posture, measured as the number of press releases, make greater environmental responsibility disclosure in their annual reports, consistent with Ullmann (1985). However, there is no evidence that financial performance is associated with disclosure.

In Elijido-Ten (2007), her study on Australian listed companies found that the levels of ownership dispersion (SP), government power (GP) and management's concern for the environment are factors influencing environmental performance. The ROA as a measure of economic performance is not significant.

Husillos and Alvarez-Gil (2008), used Ullmann's stakeholder model to examine environmental disclosures by Spanish SMEs in the automobile industry and found that Ullmann's model has low predictive power on their study, most probably due to a different setting from that used by Ullmann. Environmental performance could not be satisfactorily predicted using stakeholder salience, the strategy of the management, nor their resource availability.

In Elijido-Ten (2009), she found that the measure for stakeholder power, only government power was significant in her study on Malaysian environmental reporting. For measures of strategic posture, only environmental concern was significant while economic performance (average ROA) was not.

The above studies, with the exception of Husillos and Alvarez-Gil (2008) in a different country setting, are generally supportive of Ullmann's model. Husillos and Álvarez-Gil (2008) model showed a low predictive power and the authors commented that "the variables indicated by Ullmann (1985) continue to be

relevant" (Husillos and Álvarez-Gil 2008, 146) and Ullmann's stakeholder model continues to be relevant when studying voluntary disclosure.

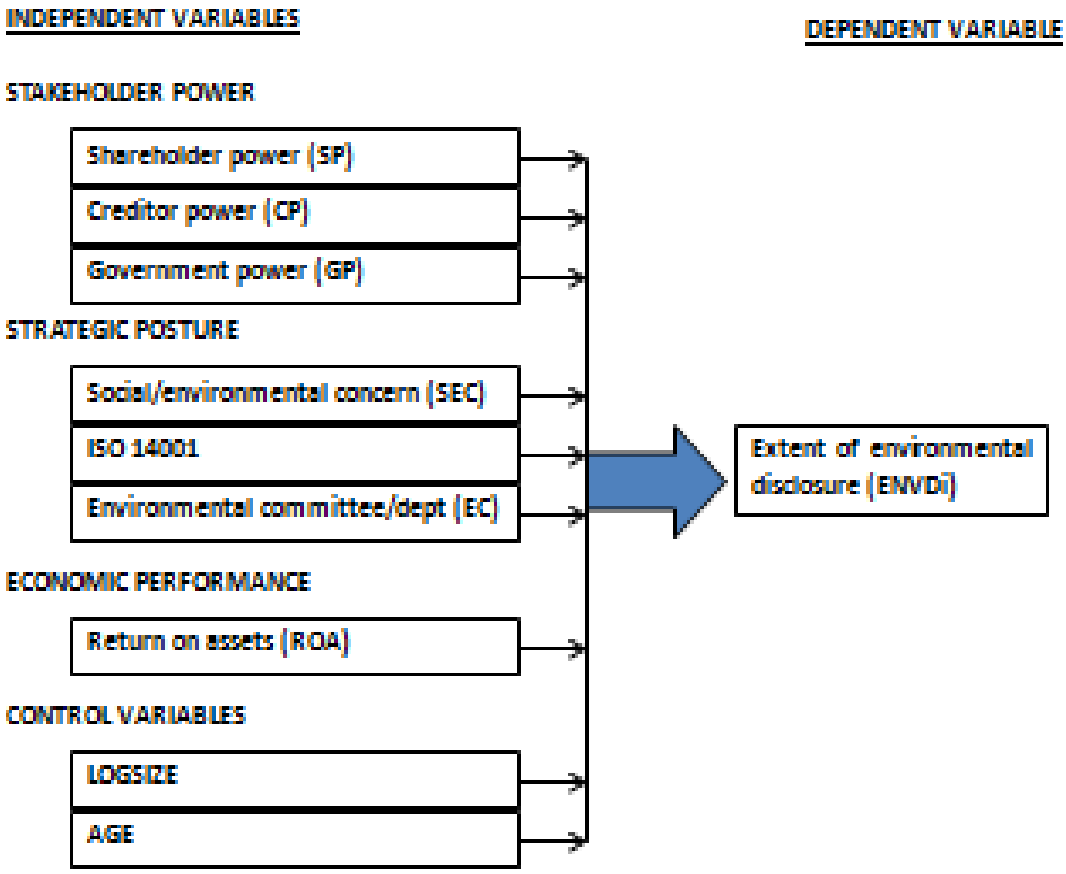
This study differs from prior studies using Ullmann's framework as the model is applied to one specific industry, the oil palm industry, in a non-transparent developing country setting. This extension is strongly supported by prior studies that reveal voluntary disclosure is culture, industry or country specific (Teoh and Thong 1984; Van der Laan Smith, Adhikari, and Tondkar 2005; Jose and Lee 2007; Orij 2010).

This study applies the Ullmann contingency framework not only to test his ideas but also to test the robustness of Ullmann's stakeholder model in a high pollution and high growth single industry. Prior studies adopting Ullmann's (1985) stakeholder model are summarised in APPENDIX 3.

3.4 EMPIRICAL SCHEMA OF ENVIRONMENTAL DISCLOSURE MODEL

The empirical schema for the model developed to measure the drivers of environmental disclosure in Malaysian oil palm companies is illustrated in Figure 3.5 below.

Figure 3.5: Empirical schema of environmental disclosure model



3.5 DEVELOPMENT OF HYPOTHESES

Arising from Ullmann's three dimensional stakeholder model, the following hypotheses are drawn to examine the relationship of stakeholder power, strategy posture and economic performance to environmental disclosure of oil palm PLCs in Malaysia.

3.5.1 Stakeholder power

Ullmann (1985) proposed that a stakeholder's power in relation to the company is a factor influencing disclosure. The very broad definition of stakeholder defined by Freeman as being any group who can affect or is affected by the organisation's

goals (Freeman 1984), would make almost everybody a stakeholder of the company.

Mitchell, Agle and Wood (1997) contributed to Ullmann (1985) stakeholder model by their definition of stakeholders as having the attributes of power, legitimacy and urgency. Power means the stakeholder can make the company do what they normally would not do, legitimacy means that the actions of the stakeholder are desirable, proper and appropriate and urgency means the degree to which a stakeholder claims call for immediate attention (Mitchell, Agle, and Wood 1997). The stakeholder attributes defined by Mitchell, Agle, and Wood (1997) is used in this study due to its explanatory power in capturing stakeholder salience.

The model suggests that the company will be motivated to provide environmental disclosure if it believes that its key stakeholders are concerned with environmental issues. The proposition arising from this dimension states that:

Proposition 1: The power of the company's stakeholders is associated with the extent of environmental disclosure.

Consistent with Mitchell, Agle, and Wood (1997) attributes of stakeholder salience, this study chooses representative stakeholders from (1) shareholders, a group of stakeholders which are the main provider of capital; (2) creditors, a group of stakeholders that can provide economic power to the company through debt financing; and (3) government – having significant ownership in oil palm companies and with a goal to achieve some social objectives (Ghazali 2007). Consistent with Proposition 1, the following hypotheses are developed:

3.5.1.1 Shareholder power (SP)

Ullmann (1985) and Kent and Chan (2009) noted that a concentrated ownership structure indicates greater power of shareholders relative to the company and greater willingness to exercise that power. A lower number of shareholders

reduce the company's costs involved in mobilising the shareholders to exercise their voting rights and the expected benefits for a shareholder wishing to exercise their voting power are higher in a firm with concentrated ownership than in a firm with diffused ownership (Kent and Chan 2009). It is expected therefore that a more concentrated ownership structure will allow owners to exert greater influence over environmental disclosures. This is somewhat ambiguous as it may be in the interest of majority shareholders to restrict disclosure if they believe it is in their economic interest.

In support of the latter, ownership concentration has been found to be statistically and negatively associated with extent of voluntary disclosure in the annual reports (Hossain, Tan, and Adams 1994; Ghazali 2007). A widely held company means the shares are not concentrated in the hands of a few shareholders. A company with widely held shares will have higher public accountability because their shares are being held by the larger public. A higher level of public accountability may require additional involvement in social or environmental activities and their disclosure. In this view, ownership concentration and therefore, shareholder power, is negatively related with the extent of voluntary disclosure.

This study choose the direction of the hypothesis suggested by Hossain, Tan and Adam (1994) and Ghazali (2007) as both these studies examined voluntary disclosure in Malaysian PLCs. The hypothesis states:

H1a: The degree of shareholder concentration is negatively associated with the extent of environmental disclosure of the company.

3.5.1.2 Creditor power (CP)

Creditor power as a stakeholder depends upon the degree to which the company relies on debt financing (Roberts 1992). The creditor's stake in a company is jeopardised if the company takes on risky business (Kent and Chan 2009). A firm

will increase its risk of claims from creditors in costly sanctions and penalties if it conducts its business activities in an irresponsible manner (Deegan and Rankin 1996). They will also suffer problems with judicial decisions and consumer bans or retaliation (Spicer 1978).

Prior research has also found that voluntary disclosure lowers agency costs (Jensen and Meckling 1976; Chow and Wong-Boren 1987), reduces capital cost (Choi 1973; Foster 1986; Diamond and Verrecchia 1991; Lev 1992) and improves the market price of securities (Fishman and Hagerty 1989). Therefore, a company that relies on debt financing would disclose more environmental information so that they are perceived as a company with low risk (Kent and Chan 2009). This suggests that:

H1b: The level of leverage (total debt/total asset) is positively associated with the extent of environmental disclosure of the company.

3.5.1.3 Government power (GP)

Government ownership is a strong feature in Malaysia's corporate sector, particularly evident in privatised entities (Ghazali 2007). It is expected that activities of government owned companies are under greater public scrutiny because they are more politically sensitive. Thus, it is hypothesised that this type of company may engage in more social or environmental activities and more disclosure of social or environmental activities to legitimise their existence (Ghazali 2007).

Roberts (1992), Kent and Chan (2009) and Elijido-Ten (2009) have used different measures of government power in their study of voluntary disclosure. Roberts (1992) used political action committee (PAC) contributions to manage political risks. Therefore higher PAC contribution is associated with more voluntary disclosure. Kent and Chan (2009) used evidence of prosecution under the Environmental Protection Act to proxy for regulator/government power. Elijido-

Ten (2009) used companies belonging to environmentally sensitive industry to proxy for government power because these companies are more likely to face stringent government regulation due to the nature of their operations. In these prior studies, government power is associated with more disclosure.

This study was unable to replicate the measure of government power utilised in some prior studies. Prosecutions for breaches of environmental legislation (Kent and Chan 2009) have not occurred in the country under study or are not reported in the annual reports. Corporate political action committee contribution (Roberts 1992) is not reported in Malaysian annual reports. Finally, all sample companies belonged to an environmentally sensitive industry (Elijido-Ten 2009).

This study used substantial government ownership to proxy for government power. Substantial government shareholding is defined as the government/government agencies having an interest in not less than 5 percent of the nominal amount of the voting shares in a company. This is in line with Malaysia's Companies Act 1965 definition of substantial shareholder as a person having an interest in not less than 5 percent of the nominal amount of the voting shares in a company (KPDNKK 2006). Therefore, companies with substantial government ownership are expected to disclose more environmental information.

H1c: Substantial government ownership is positively associated with the extent of environmental disclosure of the company.

3.5.2 Strategic posture

The second dimension in Ullmann (1985) stakeholder model, strategic posture, depicts how corporate management responds to stakeholder's social demands. An active posture is employed when managers try to influence their relationship with their stakeholders so that an optimal level of interdependence can be achieved (Ullmann 1985). They do this by developing social or environmental

programmes and disclosing them. Among the activities that serve as indicators of active strategic posture towards environmental issues are environmental/biodiversity/wildlife protection programmes, expressing environmental concern in their mission/vision statement, donating to environmental and wildlife causes, and so on.

It is therefore proposed that:

Proposition 2: The strategic posture adopted by the company is positively associated with the extent of environmental disclosure.

Roberts (1992) used two proxies for strategic posture: 1) average size of the company's public affairs staff; and 2) the presence/absence of sponsored philanthropic foundation. Kent and Chan (2009) used two proxies: 1) content of vision and mission statement; and 2) presence/absence of social responsibility or environmental committee. Magness (2006) used one proxy: the number of press releases from the company during elevated environmental concern. Elijido-Ten (2007, 2009) used two proxies: 1) environmental concern in the vision/mission statement; and 2) presence/absence of ISO (International Organization for Standardization) 14001 certification.

As the primary data source for this study is annual reports and drawing from prior research, this study will use three proxies (all three proxies are dichotomous variables): 1) the presence/absence of social/environmental concern in the vision/mission or Chairman's statement; 2) the presence/absence of ISO 14001 certification, and 3) the presence/absence of an environmental committee/ department.

ISO 14001 certification implies an active posture for environmental compliance. ISO 14001 provides "confidence and evidence to external parties that corporations have control over significant aspects of their operations and activities …" (Yusoff, Yusoff, and Lehman 2007, 897). As in Kent and Chan (2009),

this study also includes the existence of an environmental committee/department as a proxy for strategic posture to deal with stakeholder concerns and/or environmental issues. The establishment of environmental committees is therefore a manifestation of a firm's active posture towards these issues. The information for the 3 proxies is also available in the annual reports of companies.

Based on these proxies, the following hypotheses are stated:

3.5.2.1 Social or environmental concern (SEC)

H2a: Social or environmental concern in the vision/mission statement or Chairman's statement is positively associated with the extent of social or environmental disclosure of the company

3.5.2.2 ISO 14001 certification (ISO 14001)

H2b: ISO 14001 certification is positively associated with the extent of environmental disclosure of the company.

3.5.2.3 Environmental Committee (EC)

H2c: A board or executive level social or environmental committee or department is positively associated with the extent of environmental disclosure of the company.

3.5.3 Economic performance

The third dimension in Ullmann (1985) concerns the organisation's/company's profitability. The economic performance of an organisation/company influences its decision to undertake and subsequently to report social or environmental demands of its stakeholders. In view of the substantial costs of social or

environmental activities, in periods of depressed economic performance, the economic objectives of a company receives priority over social demands (Ullmann 1985; Roberts 1992). Studies on voluntary disclosure and economic performance have yielded inconsistent findings. Studies by Belkaoui and Karpik (1989), Patten (1991), Hackston and Milne (1996) and Richardson and Welker (2001) showed a weak relationship between CSR disclosure and profitability. However, studies by Singh and Ahuja (1983) and Balabanis, Phillips, and Lyall (1998) showed evidence of a positive relationship between CSR disclosure and profitability. This consistent finding of a positive relationship led prior studies (Roberts 1992; Magness 2006; Kent and Chan 2009; Elijido-Ten 2009) using Ullmann's stakeholder model to propose that economic performance is positively related to voluntary disclosure.

Hence, it is proposed that:

Proposition 3: The economic performance of the company is positively associated with the extent of environmental disclosure.

In all studies using Ullmann's three-dimensional stakeholder model, economic performance is measured using accounting-based measures. The main disadvantage of using accounting-based measures is that they reflect historical performance and are therefore subject to manipulation by the management (Holthausen 1990; Christie and Zimmerman 1994). On the other hand, the main advantage of using an accounting-based performance measure is that it disregards investors/market perceptions or prediction of the future earnings ability of the company (Kent and Chan 2009). In this study, an accounting based measure is employed to study the significance of the company's historic economic performance on a company's level of environmental disclosure.

3.5.3.1 Return on assets (ROA)

ROA has been commonly included in previous studies (Magness 2006; Kent and Chan 2009; Elijido-Ten 2007, 2009) as a measure of economic performance. Results of the study by Magness (2006), Kent and Chan (2009) and Elijido-Ten (2009) revealed that the ROA is not significantly associated with environmental disclosure. Ghazali's (2007) study on ownership structure and CSR disclosure in Malaysia also revealed that the measure of profitability, ROA, is also not significantly associated with voluntary disclosure. In Smith, Yahya and Amiruddin (2007), a study on environmental disclosure and reporting in Malaysia has found that environmental disclosure and ROA has a significantly inverse relationship.

ROA is the profit after tax/total assets of the company.

It is hypothesised that:

H3: Return on assets (ROA) is positively associated with the extent of environmental disclosure of the company.

3.5.4 Ullmann's contingency framework (Situation 1)

A modified version of Ullmann's framework is illustrated in Figure 3.4.

The hypotheses developed above are directional based on previous research which has treated these as independent of each other. Ullmann (1985) argues that this approach is simplistic and offers an alternative approach to predict levels of voluntary disclosure using a contingency framework (refer to Figure 3.4).

There is a 3-way interaction between stakeholder power, strategic posture and economic performance. This 3-way interaction occurs when all three areas of high stakeholder power, active strategic posture and good economic performance are

aligned. When stakeholder power is high, companies with active strategic posture and good economic performance will deliberately make effort to satisfy their stakeholder's demands through actual social (environmental) performance and its disclosure (situation 1), and conversely for situations 2 - 8 (Ullmann 1985). This study is confined to disclosure only and thus, it is hypothesised that:

H4: Companies which exhibit high stakeholder power, an active strategic posture and good economic performance will display high levels of voluntary environmental disclosure.

3.5.5 Control variables

As in Roberts (1992), Singh and Ahuja (1983) and Kent and Chan (2009), control variables are included for size (revenues) and age of companies. Prior research suggests that these control variables act as influential variables and should therefore be controlled for in empirical tests (Cochran and Wood 1984; Ullmann 1985; Cowen, Ferreri, and Parker 1987). Large companies undertake more social or environmental activities and their impact on society is also greater (Trotman and Bradley 1981; Teoh and Thong 1984; Andrew et al. 1989; Alnajjar 2000; Cormier and Magnan 2003). Larger companies tend to receive more public attention including special interest groups and are therefore under greater pressure to show social responsibility (Cowen, Ferreri, and Parker 1987). Age is also included in the model to control for stability and risk. Older firms are expected to have less risk (Roberts 1992; Kent and Chan 2009). According to Roberts (1992, 605) "as a corporation matures, its reputation and history of involvement in social responsibilities activities can become entrenched." Any changes in sponsorship or social or environmental activities (corporate strategy) therefore could affect stakeholder expectations and this could be very costly for the organisation/company. Age is therefore associated with voluntary disclosure.

3.6 SUMMARY

This chapter developed the conceptual framework of the study using stakeholder theory (Freeman 1984; Clarkson 1995; Fassin 2009; Freeman 2010) and specified the attributes of stakeholder salience according to the qualitative criteria of power, legitimacy and urgency (Mitchell, Agle, and Wood 1997).

This chapter discussed prior studies using the Ullmann stakeholder model including their findings. Roberts (1992) findings provide strong evidence that applications of Ullmann's stakeholder theory can explain relationships of stakeholder power, strategic posture and economic performance on corporate social disclosure. Husillos and Álvarez-Gil (2008, 146) commented that "the variables indicated by Ullmann (1985) continue to be relevant," and therefore, Ullmann's stakeholder model continues to be used by researchers in voluntary disclosure studies.

This study applies Ullmann (1985) framework and subsequently, Ullmann's three-dimensional stakeholder model to examine the influence of stakeholder power, strategic posture and economic performance on voluntary environmental disclosure of Malaysian oil palm companies. The study differs from prior studies using Ullmann's framework, as the model is applied to one specific industry, the oil palm industry, in a non-transparent developing country setting. This extension is strongly supported by prior studies that reveal voluntary disclosure is culture, industry or country specific (Teoh and Thong 1984; Van der Laan Smith, Adhikari, and Tondkar 2005; Jose and Lee 2007; Orij 2010). Eight sets of hypotheses have been developed based on the model.

The next chapter discusses the research methodology of the study and data analysis and results of annual report environmental disclosure of companies

CHAPTER 4

RESEARCH METHODOLOGY AND DATA ANALYSIS AND RESULTS (ANNUAL REPORTS ENVIRONMENTAL DISCLOSURE)

4.1 INTRODUCTION

This chapter explains the research paradigm, research methodology and design underpinning this study. The primary methodology for this study is quantitative and conducted through examination of company annual reports. However, both survey and interview data are used to enhance the validity of the findings. The latter are also used to explore certain aspects of the study that received only limited examination in previous literature.

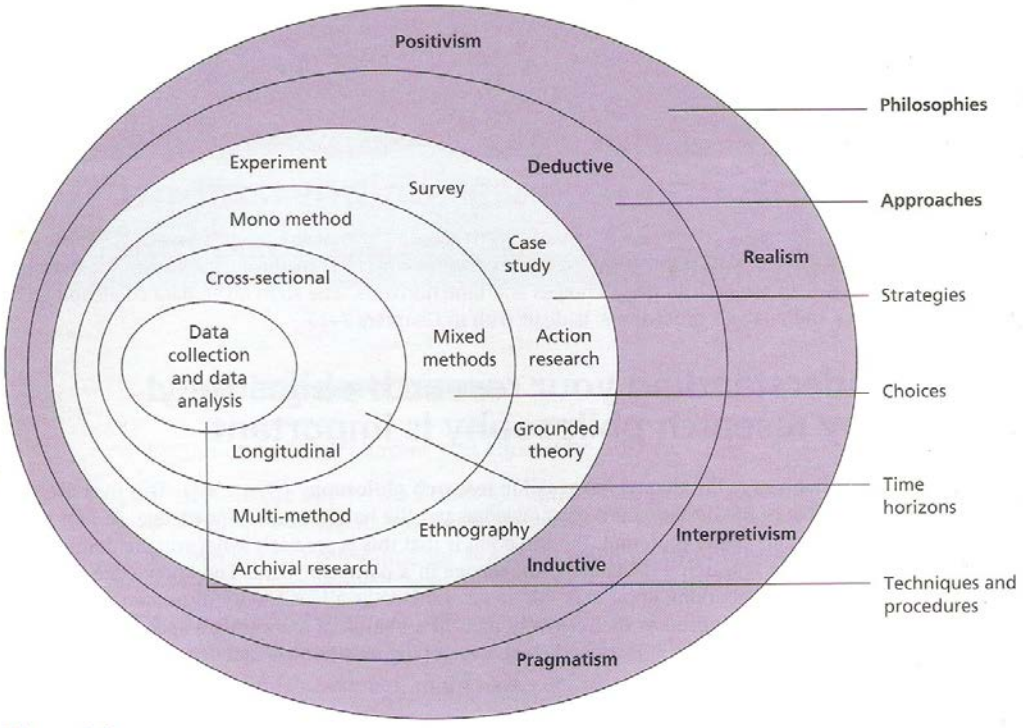
The second part of this chapter will discuss Phase 1 of the study which is the annual reports environmental disclosure. Quantitative data collected from company annual reports would be analysed and the results discussed.

4.2 RESEARCH PROCESS

In order to give direction to this study, the research process 'onion' of Saunders, Lewis and Thornhill (2009, 108) was adopted. This 'onion' illustrates the choices, paradigms, strategies and steps followed by researchers during the research process (refer to Figure 4.1 below). The research process 'onion' provides a general overview of the important issues that accompanies any research undertaking. The different layers of the 'onion' serve as a basis from which to consider the philosophical orientation of the researcher, the research approach adopted, appropriate research strategies, the research time lines under review and the data collection techniques employed by the researcher (Saunders, Lewis, and Thornhill 2009, 108).

According to Saunders, Lewis and Thornhill (2009, 107), the research philosophy adopted by the researcher contains important assumptions about the way in which the researcher views the world. These assumptions will underpin the research strategy and the method chosen as part of that strategy.

Figure 4.1: Research process 'onion'



Source: Saunders, Lewis, and Thornhill (2009, 108)

According to Creswell (2003, 3), a research proposal would consist of three framework elements: philosophical assumptions about what constitutes knowledge claims; general procedures of research called strategies of inquiry, and detailed procedures of data collection, analysis, and writing, called methods.

4.3 RESEARCH PARADIGM

Saunders, Lewis and Thornhill (2009, 118) defines paradigm as "... a way of examining social phenomena from which particular understanding of these

phenomena can be gained and explanation attempted." Mertens (2005, 2) defines paradigm as inquiry whereby data are collected, analysed and interpreted in some way in an effort to "understand, describe, or control an educational or psychological phenomenon or to empower individuals in such contexts." Guba and Lincoln (1994) also describe a paradigm as a set of basic beliefs which stems from consideration of three metaphysical questions which are ontological, epistemological and methodological.

Rather than using the word 'paradigm,' Creswell (2003, 6) proposed four schools of thought with regards to knowledge, namely, post-positivism, constructivism, pragmatic and advocacy/participatory action research (PAR).

A research paradigm therefore influences the way knowledge is studied and interpreted. According to Mackenzie and Knipe (2006), the choice of paradigm is the basis for the subsequent choices on the methodology, methods and research design.

4.4 OVERVIEW OF RESEARCH FRAMEWORK

The research framework developed in this study is quantitative research with mixed method data collection and analysis (see Table 4.1 below). The theoretical paradigm of positivism and its associated assumptions connect to strategies for inquiry and methods for collecting data which will satisfy the paradigmatic imperatives, the objectives and research questions of the study.

Table 4.1: Overview of research framework

Research paradigm	Quantitative research (Positivism)
Assumptions:	
Ontology	Objective and independent of social actors: philosophical stance of the natural scientist; concerned with facts.
Epistemology	Objectivism: only observable phenomena can provide credible data.
Axiology	The researcher is independent of the data and maintains an objective stance.
Research approach	Deduction: testing theory
Research strategy	Sequential mixed method: uses quantitative and qualitative techniques and procedures in combination including the use of primary and secondary data.
Data collection techniques	Annual reports disclosure, interviews and questionnaire survey.
Data analysis	Quantitative and quality data are analysed sequentially and the results are later integrated for the purpose of triangulation.

Source: Adapted from Lincoln and Guba (2000, 168)

The research paradigm of this study is based on the positivist view which uses precise language and studies phenomena objectively that can be measured by gathering quantitative data. The reason for adopting a positivist paradigm is that the constructs identified in the proposed research model could objectively be measured and observed for further rigour and validation of variables.

4.5 RESEARCH METHODOLOGY

4.5.1 Mixed method research approach

Mixed method research has been defined by Creswell et al. (2003, p. 212) as " … the collection or analysis of both quantitative and qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research." Creswell further added that mixed method should be used when both quantitative and qualitative data together provide a better understanding of the research problem then either type by itself. According to Johnson and Onwuegbuzie

(2004) and Onwuegbuzie and Leech (2005), the goal of mixed methods research is not to replace the traditional quantitative or qualitative research but rather to draw from the strengths and minimise the weakness of both as today's research world is becoming increasingly interdisciplinary, complex and dynamic. Brannen (2005) noted that multi-method research is not necessarily better research but rather, it is an approach employed to address the variety of questions posed in a research investigation. Mixed-methods designs provide important tools to overcome limitations of both qualitative and quantitative 'mono-method research.'

According to Saunders, Lewis, and Thornhill (2009, p. 154), some of the reasons for using mixed methods designs are triangulation (the use of two or more independents sources of data or data collection methods to corroborate research findings), facilitation (to aid research), complementarity, generality, aid interpretation, study different aspects and to solve a puzzle.

Some of the strengths of mixed methods, according to Johnson and Onwuegbuzie (2004) is that it can provide stronger evidence for a conclusion through convergence and corroboration of findings, can add insights and understanding that might be missed if using only a single method, can add generalisability and quantitative and qualitative research used together can produce a more complete knowledge necessary to inform theory and practice.

The main drawbacks for mixed method research are the on-going debate on paradigmatic wars – mixing of worldviews, more time consuming, more expensive, researchers have to learn multiple methods and approaches and may require a research team rather than a single researcher to conduct the study (Johnson and Onwuegbuzie 2004).

Notwithstanding the paradigm wars, this study adopted a positivist paradigm and a sequential mixed method research approach or more specifically, a three-phased sequential quantitative – qualitative - quantitative design, quantitative research approach to answer the research question. According to Creswell (2003, 21), there

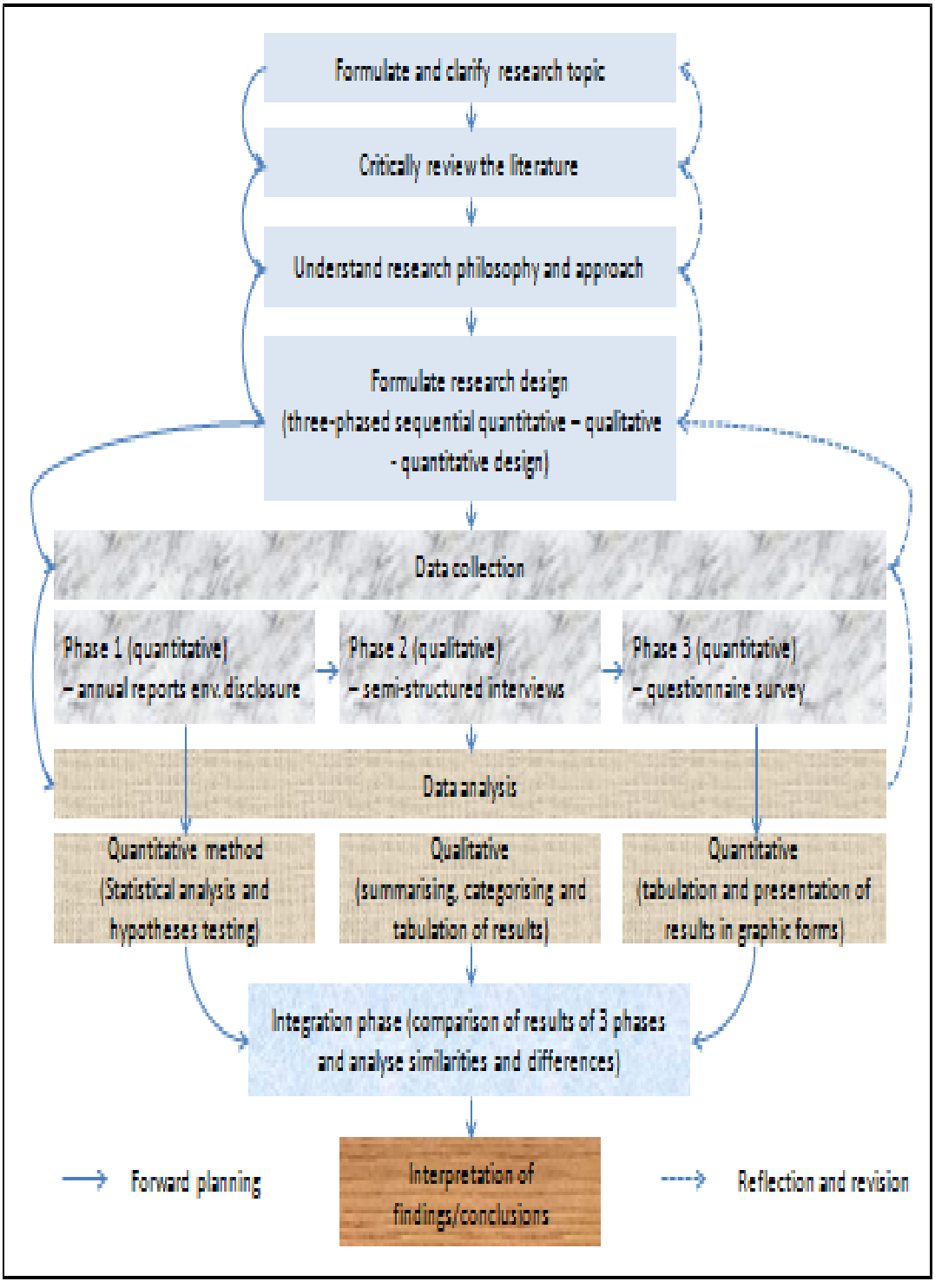
should be a match between the research problem and the approach chosen. Kelle (2006) highlights that substantive research questions predominantly influence methodological as well as data collection methods and epistemological considerations. Mackenzie and Knipe (2006) suggests that it is the paradigm and research question, which should determine which research data collection and analysis methods (qualitative/quantitative or mixed methods) will be most appropriate for a study.

The need for a mixed method approach in this study is based primarily on the consideration of the research setting - Malaysia offers a combination of publicly listed companies producing audited company information, however some doubts remain as to its reliability and government organisations/private firm data which is often neither publicly available nor audited. In this environment, the resulting mixture or combination of quantitative and qualitative research techniques is the best method to test the robustness of the findings by subjecting them to multiple testing methods.

4.5.2 Mixed method research process

The following discussion describes in detail the steps in the mixed method research process of this study (see Figure 4.2 below).

Figure 4.2: Research process of study



Source: Adapted from Saunders, Lewis and Thornhill, (2009, p. 11)

4.6 ANNUAL REPORTS ENVIRONMENTAL DISCLOSURE

The extent of environmental disclosure of Malaysian oil palm and non-oil palm public listed companies (PLCs) is examined using company annual reports. Interviews and questionnaire surveys are used to uncover environmental disclosure of oil palm non-PLCs/government agencies and also to build on the findings from the annual reports.

This first quantitative phase will use annual reports environmental disclosure to achieve the following research objectives:

1. To examine the association of stakeholder power, strategic posture and economic performance (based on Ullmann's Three-Dimensional Stakeholder Model) to environmental disclosure in Malaysian oil palm companies and non-oil palm companies;

2. To determine the extent of environmental disclosure of Malaysian oil palm and non-oil palm companies.

4.6.1 Empirical form of environmental disclosure model

The empirical form of the environmental disclosure model is:

$$\text{Environmental disclosure index (ENVDi)} = \beta_0 - \beta_1 SP_i + \beta_2 CP_i + \beta_3 GP_i + \beta_4 SEC_i + \beta_5 ISO14001_i + \beta_6 EC_i + \beta_7 ROA_i + \beta_8 LOGSIZE_i + \beta_9 AGE_i + e_i$$

Where:

ENVDi - Environmental disclosure index measured using a ten-point-scoring of environmental factors;

β_0 - Intercept term

$\beta_1 - \beta_9$ - Coefficient

SP - Shareholder power of company i measured as the proportion of ownership of company held by shareholders holding 5% or more of total shareholding;

CP - Creditor power of company i measured as the level of leverage (total debts/total assets);

GP - Government power of company i (1 for companies with substantial government ownership; 0 otherwise);

SEC - Existence of social/environmental concern of company i in the mission/vision/Chairman's statement (1 for companies with social/environmental concern; 0 otherwise);

ISO14001- Possession of an ISO 14001 certification of company i (1 for companies with ISO 14001 or RSPO certification; 0 otherwise);

EC - Existence of an environmental committee of company i (1 for companies with environmental committee or department; 0 otherwise);

ROA - Return on assets of company i measured as profit after tax/total assets;

LOGSIZE- Natural logarithm of size (revenue) of company i;

AGE - Age of company i; and

e_i - error term.

The dependent and independent variables are shown in the empirical schema shown in Table 3.5 in Chapter 3.

4.6.2 Data collection and sample selection

4.6.2.1 Sample size

According to Tabachnick and Fidell (2007, 123) the formula for calculating sample size measurement is N> 50 + 8m (where m is the number of independent variables). In this respect therefore, the sample size (N) for this study should be N > 122 (50 + 8

x 9). Five years of data (2005-2009) was collected in order to meet the minimum requirement for sample size in multiple regression analysis.

4.6.2.2 Sample selection

The 36 oil palm PLCs selected comprises the full population of oil palm PLCs as per the 2010 Oil Palm Directory. However, 3 oil palm PLCs did not have 5 years of data and were therefore excluded from the study. A matched 33 companies from the Industrial Products sector of the Bursa Malaysia are chosen for comparison based on 2 criteria: 1) similarity in industry type; both plantation and industrial products sectors are environmentally sensitive industries, and 2) similarity in size, measured in terms of revenue. 33 NOP companies are selected based on the matching criteria, using 2009 revenue as a basis for matching similarity in size. In total 5 years of data will be collected from the selected 33 NOP companies. The results of the sample selection showed that 79% of the sample pair of companies are within ±5% of their revenue with the remaining 21% within 10%. The total data set consists of 330 observations (165 oil palm PLCs and 165 non-oil palm PLCs).

4.6.2.3 Data pooling

The data collected for this study constitutes a short balanced panel as the number of companies exceeds the number of time periods and each company has the same number of observations. It would be possible to estimate a cross-sectional regression (one for each year), however this would dramatically reduce the degrees of freedom available. This approach also neglects information available from the full panel data (Gujarati and Porter 2009, 593). This is further supported by Verma, Gagliardi, and Ferretti (2009, 1), who note there are three fundamental objectives of pooling of statistical data or estimates: "(1) cumulation or aggregation in order to obtain more precise estimates, albeit normally with some loss of detail; (2) comparisons of trends and differences across populations and

times, …" and "(3) meeting the more general and broader objective of common interpretation of statistical information from different sources …" Baltaggi, Bresson, and Pirotte (2008) adding that one of the main motivations behind pooling a time series of cross-sections is to widen the database in order to get better and more reliable estimates of the parameters of the model.

As a result five years of data (2005-2009) were pooled from the 33 oil palm PLCS and a matched 33 non–oil palm PLCs, resulting in panel data of 165 oil palm and 165 non-oil palm PLCs.

In this study, pooling the data meets the pre-requisite of comparability (Verma, Gagliardi, and Ferretti 2009) because it involves the same sample population of 33 oil palm and 33 matched non-oil palm PLCs (by size and industry). They pointed out that issues of comparability are more severe when the data sources are different, and especially when the populations involved are also different, because how similar or different the sources are, is actually a matter of degree.

In order to allow for time effects, time dummies were introduced to the model for each year. This should capture changes to such factors as technology, regulatory and economic indicators which may change over time period studied.

The final regression model meets all the statistical test requirements (refer to Section 4.6.5.1) including the estimated Durbin-Watson statistic (refer to Section 4.6.5.3) which detects autocorrelation and or spatial correlation in the data (Gujarati and Porter 2009, 594).

By pooling the data in this study, the uniqueness of each company operation was ignored and it does not reveal if each company response would be as that predicted by the model. However, according to Verma, Gagliardi, and Ferretti (2009, 15) "… particular forms of measures chosen are always determined by considerations of usefulness and practicality, are always compromises and in themselves not 'sacred'" because pooling effectively trades dimensions, "…

gaining in some more needed directions by losing something less needed for the particular purpose - but are often more, or at least equally, meaningful and useful."

4.6.2.4 Separate modelling analyses for OP and NOP

This study's main focus is to examine the determinants of environmental disclosure of the Malaysian oil palm industry. The non-oil palm PLCs were included to serve as a comparison to the oil palm PLCs disclosure investigation. A comparative study can also add depth and insight to the findings. Prior studies revealed that voluntary disclosure is not only country or culture specific but also industry specific (Teoh and Thong 1984; Van der Laan Smith, Adhikari, and Tondkar 2005; Jose and Lee 2007; Orij 2010). A single country and single industry study seeks to control for these factors.

Prior studies (Brown and Deegan 1998; Neu, Warsame, and Pedwell 1998; Bewley and Li 2000; Cormier and Magnan 2003) also found that industries that attract a large amount of media attention are associated with higher levels of environmental disclosure. Despite their (OP and NOP companies) similarities, i.e. both belonging to environmentally sensitive industries, the oil palm industry has attracted a lot of media attention, a factor not shared by its counterpart.

Furthermore, focusing on a specific industry will add significance to this study and sets it apart from prior studies that had used Ullmann's framework to examine environmental disclosure across the wide spectrum of public listed companies.

There is a need therefore to develop 2 separate environmental disclosure models to distinguish between the two industries, OP and NOP, to add insight into the Malaysian disclosure practices.

4.6.3 Measurement of variables

4.6.3.1 Dependent variable: environmental disclosure index (ENVDi)

For the purpose of measuring environmental disclosure, annual reports were obtained for the year 2005-2009 from the sample companies. While CSR disclosure is not limited to the annual report (Zeghal and Ahmed 1990), this medium is a primary information source for corporate environmental disclosure and the principal means for corporate communication of environmental activities by companies (Wiseman 1982). Prior studies on corporate social or environmental disclosure in emerging or developing nations (Teoh and Thong 1984; Andrew et al. 1989; Ghazali 2007; Othman and Ameer 2009) have focused on the annual reports as an important source of information for environmental disclosures and the presentation of financial, social and environmental information. Furthermore, the information in the annual report is the most requested by lobby groups and CSR discussion is considered to have greater credibility when it is included in the annual report (Tilt 1994). The annual report is also one communication medium over which management has complete editorial control and is therefore not subject to journalistic interpretations and distortions which are possible through popular press (Guthrie and Parker 1989).

However, the content analysis of annual reports method does have a number of disadvantages: (1) In the annual reports of US companies, environmental disclosures are found to be vague, incomplete or unreliable (Wiseman 1982; Rockness 1985; Freedman and Wasley 1990; Gamble et al. 1995). (2) It might be a legitimacy device rather than an accurate reflection of behaviour (Deegan and Rankin 1996; O' Donovon 2002). (3) Companies are also increasingly using a variety of alternative reporting media (including interim reports, newspaper advertisements, press releases, and so on (Zeghal and Ahmed 1990). These limitations required the use of multiple data sources to address the research question.

Several earlier studies (Cowen, Ferreri, and Parker 1987; Guthrie and Parker 1989; Patten 1991; Neu, Warsame, and Pedwell 1998) used volume of disclosure as the dependent variable instead of a scoring system such as applied here. While volume of disclosure may reflect the emphasis management places on a particular topic, it fails to capture the subtle issues inherent in impressions management strategy (Neu, Warsame, and Pedwell 1998). Different volume measurement has been employed in previous studies and each has its advantages and limitations. These include the number of pages (Patten 1992; Deegan and Rankin 1996) and proportion of page (Guthrie and Parker 1990; Gray, Kouhy, and Lavers 1995) which reflect the amount of total space given to a topic, inferring that the bigger the space, the more important the topic (Krippendorff 1980). However, such measurements may be affected by font size, margins and treatment of blank parts of a page. The use of number of words (Zeghal and Ahmed 1990; Deegan and Rankin 1996; and Gordon 1996a) is more practical and easily categorised but may be affected by the style of writing (Hackston and Milne 1996). Number of sentences (Hackston and Milne 1996; Tsang 1998) has the advantages of being more easily identifiable, avoids problems of allocations based on proportion of page and standardising number of words.

Roberts (1992) used a scoring system derived from the US Council of Economic Priorities (CEP) ratings to measure disclosure. The rating system gives 2 for excellent, 1 for good, and 0 for poor. In Kent and Chan (2009), environmental disclosure is measured by first identifying sentences that were termed "environmentally related disclosures" by the researchers. Next, the researchers produced a disclosure set adapted from (Gray, Kouhy, and Lavers 1995) and (Hackston and Milne 1996). Twenty-six Accounting/Commerce university graduates were asked to read the identified passages and asked to provide a subjective rating by completing a Likert style rating scale from 0 (not an environmental disclosure) to 5 (excellent environmental disclosure). In Magness (2006), she used a seven-point scoring factor. Each annual report was scored independently by two accounting professors. A score of 0 or 1 was assigned for

each of the disclosure items regardless of where it is included in the report. The Magness (2006) study distinguished between mandatory and voluntary disclosure. Elijido-Ten (2009) study used content analysis to analyse quantity and quality of environmental disclosure. A score of 3 to *quantity specific disclosures* related to an Environmental Disclosure Index, 2 to *non-quantitative but specific information* and score of 1 to *general or qualitative or vague comments*. Quantity of environmental disclosure was measured using number of sentences. Husillos and Álvarez-Gil (2008) used a weighting on four groups of environmental information obtained from the annual reports of the sample companies. The weighting is based on information that has the greatest impact on a firm's reputation; to be a quantitative nature and information that is audited by a third party unrelated to the organisation. This classification is also used in Cormier and Magnan (2003) and Al-Tuwaijri, Christensen, and Hughes II (2004).

This study uses regression analysis to evaluate corporate disclosure in annual reports as in Magness (2006) and Ghazali (2007). In this study, the disclosure items represent both the breadth and extensiveness of disclosure and also distinguish the different types of information content. Essentially, the approach to scoring items is dichotomous in that an item in the research instrument scores 1 if disclosed and 0 if it is not, based on an unweighted method which means that all information are equally valued regardless of their importance to any particular group (Haniffa and Cooke 2005; Magness 2006; Ghazali 2007).

Environmental disclosure is therefore measured using a ten-point-scoring of environmental factors. The Environmental Disclosure Index (ENVDi) is derived by computing the ratio of actual scores awarded to the maximum score attainable (10) by that company. The rationale for the 10 point measure is that it distinguishes the different types of information content, which is more suitable for a country setting that is already known for their low level of disclosure.

The ten-point-scoring environmental factors are based on disclosure of the following:

1. Biodiversity/environmental/wildlife protection programme.
2. Support for public/private action designed to protect the environment.
3. Data on raw materials used by weight or volume and their conservation & recycling.
4. Data on emissions, effluents and wastes such as greenhouse gas GHG and initiatives to reduce/manage emissions, effluents and wastes.
5. Data on energy consumption and initiatives to provide energy-efficient or renewable energy based products.
6. Data on water consumption and recycle/reuse.
7. Narrative on procedures relating to training and raising awareness in relation to environmental impacts of operations.
8. Inclusion of discussion on feedback from stakeholders such as business partners, employees and community leaders/stakeholder engagement.
9. Presentation of current year cash flows for environmental protection programme or remediation.
10. The use of CSR/environmental reporting guideline such as GRI, Bursa Malaysia's CSR framework or other appropriate framework.

Items 1, 2 and 3 are included in the score factor used by Haniffa and Cooke (2005) and Bursa Malaysia's CSR framework (Bursamalaysia 2004, 2006, 2011). Items 4, 5 and 6 are included in the Report of the Judges: ACCA Malaysia Sustainability Reporting Awards (MaSRA) 2009, National Annual Corporate Report Awards (NACRA) criteria, GRI Sustainability Reporting Guidelines (GRI 2011), Bursa Malaysia's CSR framework and Sustainability Reporting Guidelines for Malaysian Companies SRGMC (ACCA 2005) as items signalling active environmental activities and therefore environmental stewardship. Items 7, 8 and 10 are included in the Report of the Judges: ACCA Malaysia Sustainability Reporting Awards (MaSRA)

2009 which is also based on the GRI Sustainability Reporting Guidelines and item 9 is included in the score factor used by Magness (2006) which gives a monetary value of environmental activities.

GRI Sustainability Reporting Guidelines Version 3.1 (G3.1) is a finalised update of GRI's most recent generation of Sustainability Reporting Guidelines and is the most comprehensive sustainability reporting guidance currently available (GRI 2011). G3.1 defines the environmental dimension of sustainability as an organisation's impact on living and non-living natural systems, including ecosystems, land, air and water. Environmental indicators cover performance related to inputs (e.g. material, energy, water) and outputs (e.g. emissions, effluents, waste). They also cover performance related to biodiversity, environmental compliance and other relevant information such as environmental expenditure and the impacts of products and services.

A comparison of this study's ten-point-scoring environmental factors against GRI environmental indicators and other studies/framework/criteria is shown in Table 4.2 below.

Table 4.2: Comparison of ten-point-scoring environmental factors, G3.1 environmental indicators and other frameworks/criteria

Ten-point-scoring environmental factors	**G3.1 environmental indicators**	**Other studies/ framework/criteria**
1. Biodiversity/environmental/ wildlife protection programme.	EN11, EN12, EN13, EN14, EN15	Haniffa and Cooke (2005) and Bursa Malaysia's CSR framework
2. Support for public/private action designed to protect the environment.		Haniffa and Cooke (2005) and Bursa Malaysia's CSR framework
3. Data on raw materials used by weight or volume and their conservation & recycling.	EN1, EN2	Haniffa and Cooke (2005) and Bursa Malaysia's CSR framework

4. Data on emissions, effluents and wastes such as GHG and initiatives to reduce/manage emissions, effluents and wastes.	EN21, EN22, EN23, EN24, EN25	MaSRA 2009, NACRA criteria, Bursa Malaysia's CSR framework and SRGMC
5. Data on energy consumption and initiatives to provide energy-efficient or renewable energy based products.	EN3, EN4, EN5, EN6, EN7	MaSRA 2009, NACRA criteria, Bursa Malaysia's CSR framework and SRGMC
6. Data on water consumption and recycle/reuse.	EN8, EN9, EN10	MaSRA 2009, NACRA criteria, Bursa Malaysia's CSR framework and SRGMC
7. Narrative on procedures relating to training and raising awareness in relation to environmental impacts of operations.	P. 27 – procedures related to training and raising awareness	MaSRA 2009
8. Inclusion of discussion on feedback from stakeholders such as business partners, employees and community leaders/stakeholder engagement.		MaSRA 2009
9. Presentation of current year cash flows for environmental protection programme or remediation.	EN30	Magness (2006)
10. The use of CSR/environmental reporting guideline such as GRI, Bursa Malaysia's CSR framework or other appropriate framework.		MaSRA 2009

4.6.3.2 Independent variables: stakeholder power, strategic posture and economic performance

The following discusses measures of the independent variables under the headings of stakeholder power, strategic posture and economic performance.

a. Stakeholder power

Stakeholder power, the first dimension of Ullmann (1985) stakeholder model, measures the ability of stakeholders to influence corporate management. This is viewed as a function of the stakeholder's degree of control over resources required by the company. The measures for stakeholder power in the study imply only the potential to exert power and not actual exertion of power.

Although a multiplicity of groups have a potential stake in an organisation and that no stakeholders stand alone in the process of value creation (Freeman 2010), for reason of practicality, this study identifies 3 main stakeholders for analysis.

Shareholders, creditors and government are identified as primary stakeholders of any company (Freeman 1984; Clarkson 1995; Mitchell, Agle, and Wood 1997; Fassin 2009; Freeman 2010) because their support for the company is required if the company is to continue as a going concern. This selection of stakeholders are similarly included in Roberts (1992), Kent and Chan (2009), Elijido-Ten (2007), Husillos and Alvarez-Gil (2008) and Elijido-Ten (2009).

Shareholder power (SP)

Shareholder power may be measured by examining the degree of ownership concentration of the company. The measure selected for ownership concentration within a company is the proportion of shares held by shareholders who owns five percent or more of outstanding ordinary shares of the company (Roberts 1992; Kent and Chan 2009; Husillos and Álvarez-Gil 2008; Elijido-Ten 2009). Malaysia's Companies Act 1965, Section 69D (KPDNKK 2006) defines substantial shareholder as a person who "... has an interest in one or more voting shares in the company and the nominal amount of that share, or the aggregate of the nominal amounts of those shares, is not less than five per centum of the aggregate of the nominal amounts of all the voting shares in the company." The data is obtained from the

Shareholdings Analysis of the annual reports of the sampled companies. Malaysia's Companies Act 1965, Section 69L requires that a company keeps a register of its substantial shareholders.

Creditor power (CP)

Creditor power as a stakeholder depends upon the degree to which the company relies on debt financing (Roberts 1992). According to Cornell and Shapiro (1987), creditors are able to exercise their economic power by increasing the cost of capital or withholding debt financing. Numerous studies also suggest that the company's unbooked environmental liabilities are considered in their assessment of the company's level of risk (Barth and McNichols 1994; Cormier and Magnan 1997; Hughes II 2000; Clarkson, Li, and Richardson 2004). The implication is such that the more the firm relies on debt financing, the more likely it will provide more disclosures to be seen as a company with lower risk.

Creditor power, in this study, is measured as the level of leverage of the company (total debt/total asset ratio) and this data is obtainable from the financial statement of the company's annual reports.

Government power (GP)

The measure adopted for government power differs from prior studies using the Ullmann stakeholder model. In Roberts (1992), corporate political action committee contribution is an indicator of government stakeholder power. In Kent and Chan (2009), government power is taken as the incidence of prosecutions for breaches of environmental legislation. In Elijido-Ten (2009), government power is measured as companies belonging to environmentally sensitive industries which are more likely to face stringent government regulation due to the nature of their operations and the discharge of hazardous wastes. In all these prior studies, government power is associated with more disclosure.

In this study, government power is a dummy variable (1 for substantial government ownership; 0 otherwise) measured as substantial government ownership in the sample companies.

b. Strategic posture

Strategic posture, the second dimension of Ullmann (1985) stakeholder model pertains to the way the entity responds to social demands. An active posture implies that managers seek to influence their key stakeholders' perception by undertaking corporate social/environmental responsibilities activities. Magness (2006) used Ullmann's (1985) model in her study and found that managers have the opportunity to devise their specific strategy to shape stakeholder impressions by the number of press releases (proxy for media presence) after a mine accident. Another study by Roberts (1992) found companies displaying active strategic posture are expected to disclose more environmental information regarding their environmental responsibility activities.

In this study, 3 proxies serve as indicators of the nature of a company's strategic posture toward environmental issues. These are social/environmental concerns in the vision/mission statement or Chairman's statement, possession of ISO 14001 certification and the existence or absence of committees established to deal with stakeholder concerns and to deal with the company's environmental issues.

Social/environmental concern (SEC)

The company's objectives are stated in their mission/vision or Chairman's statement. A company that acknowledges their stakeholders' environmental concerns in their mission/vision statement or Chairman's statement indicate an active posture on the part of the company (Kent and Chan 2009). These

statements demonstrate the company's commitment towards environmental issues and are therefore a reliable indicator of the company's strategic posture.

In this study, the SEC (social/environmental concern) variable of a company is set to 1 if the mission/vision or chairman's statement of the company discloses recognition of the company's social or environmental responsibility. The variable is set to 0 where the mission/vision statement or chairman's statement does not acknowledge the company's social or environmental responsibility or where no mission/vision or chairman's statement is included in the company's annual report.

ISO 14001 certification

In addition, this study will use ISO 14001 certification as it implies an active posture for environmental compliance. The ISO 14001 standard enables a company to identify and control the environmental impact of its activities, products and services; to continuously improve its environmental performance; and to implement a systematic approach to set and achieve environmental objectives and targets (ISO14001 2011). The ISO standard applies to those environmental aspects identified and controlled or influenced by the organisation. The ISO 14001 standard does not specify environment performance criteria but merely how to develop an Environmental Management System - EMS (ISO14001 2011). ISO 14001 provides confidence and evidence to external parties that corporations have control over significant aspects of their operations and activities (Yusoff, Yusoff, and Lehman 2007).

In this study, the ISO 14001 variable is set to 1 if the company possesses a ISO 14001 certification and 0 otherwise.

Environmental committee (EC)

A firm's strategic posture is also likely to be identified by ascertaining the existence or absence of committees established to deal with stakeholder concerns. The establishment of social responsibility or environmental committees is manifestation of a firm's active posture towards these issues (Cowen, Ferreri, and Parker 1987). Thus it is expected that firms with established social responsibility or environmental committees are likely to make more/better environmental disclosures than firms without these committees.

In this study, environmental committee (EC) is a dummy variable (1 for existence of an environmental committee; 0 otherwise) for the sample companies.

Prior studies that used EC as a strategic posture variable are Kent and Chan (2009) and Elijido-Ten (2009).

c. Economic performance

Ullmann's third dimension concerns the company's profitability and how this affects the company's decision to undertake and subsequently to report social demands of its stakeholders because of the substantial costs of social activities (Roberts 1992; Ullmann 1985).

In this study, the ROA, calculated as the profit after tax/total asset, is employed to test the impact of economic performance on a company's level of environmental disclosure.

d. Control variables: company size and age of company

Two additional variables extraneous to Ullmann's (1985) model are included in this study as control variables.

Company size

Several studies have found that firm size is a significant factor in a firm's production of social responsibility disclosures (Cowen, Ferreri, and Parker 1987; Trotman and Bradley 1981; Patten 1991). The rationale given for the size-disclosure relationship is that larger firms are more politically visible and more likely to adopt measures to reduce that visibility (Watts and Zimmerman 1986).

The measure of company size included in this study is the natural log of total revenue which is obtained from the company's annual financial statements. The International Accounting Standard defines revenue as the "gross inflow of economic benefits during the period arising in the course of the ordinary activities of an entity when those inflows result in increases in equity, other than increases relating to contributions from equity participants" (EC 2009).

Age of company

The control variable AGE is the age of the company since incorporation. The age of a company is introduced into this study as a surrogate for risk. Older firms are expected to have less risk (Roberts 1992; Kent and Chan 2009; Elijido-Ten 2009). Whilst it is acknowledged that older companies are expected to have less risk, there are many other factors that confer risk, such as business risk, financial risk, market risk and societal risk. Age will impact on each of them in different ways.

According to Roberts (1992, 605) "as a corporation matures, its reputation and history of involvement in social responsibilities activities can become entrenched." The age of a company is therefore associated with disclosure.

4.6.4 Descriptive statistics

In describing the data and analysis, the following abbreviations have been used:-

OP	-	Oil Palm
NOP	-	Non-Oil Palm
PLCs	-	Public listed companies
ENVDi	-	Environmental disclosure index
SP	-	Shareholder power
CP	-	Creditor power
GP	-	Government power
SEC	-	Social/environmental concern
ISO 14001	-	ISO 14001 certification
EC	-	Environmental committee/department
LOGSIZE	-	Natural logarithm of size (revenue)
AGE	-	Age of company

Table 4.3 presents the descriptive statistics of the pooled raw data. One (1) dependent variable (ENVDi), seven (7) independent variables (SP, CP, GP, SEC, ISO 14001, EC and ROA) and two (2) control variables (LOGSIZE and AGE) are measured.

Table 4.3: Descriptive statistics of pooled data for the period 2005-2009 for matched oil palm and non-oil palm companies

Oil Palm Companies

	ENVDi	SP	CP	GP	SEC	ISO 14001	EC	ROA	LOGSIZE	AGE
N	165	165	165	165	165	165	165	165	165	165
Mean	0.20	-49.47	28.16	0.38	0.57	0.20	0.19	6.57	4.01	37.45
Median	0.10	-54.17	26.73	0.00	1.00	0.00	0.00	5.83	4.18	35.00
Std. Deviation	0.22	19.48	20.98	0.49	0.50	0.40	0.40	6.09	1.78	22.70
Range	0.70	90.86	83.12	1.00	1.00	1.00	1.00	35.95	8.41	90.00
Minimum	0.00	-90.86	0.14	0.00	0.00	0.00	0.00	-8.26	0.00	5.00
Maximum	0.70	0.00	83.26	1.00	1.00	1.00	1.00	27.69	8.41	95.00

Non-Oil Companies

	ENVDi	SP	CP	GP	SEC	ISO 14001	EC	ROA	LOGSIZE	AGE
N	165	165	165	165	165	165	165	165	165	165
Mean	0.12	-52.93	29.40	0.33	0.39	0.15	0.08	5.76	3.91	23.94
Median	0.10	-58.09	25.94	0.00	0.00	0.00	0.00	3.81	4.07	21.00
Std. Deviation	0.17	19.97	22.22	0.47	0.49	0.35	0.27	8.68	1.76	12.63
Range	0.70	83.57	90.32	1.00	1.00	1.00	1.00	41.14	7.46	44.00
Minimum	0.00	-92.22	0.03	0.00	0.00	0.00	0.00	-9.83	0.00	5.00
Maximum	0.70	-8.65	90.35	1.00	1.00	1.00	1.00	31.31	7.46	49.00

4.6.4.1 Dependent variable: environmental disclosure index (ENVDi)

From Table 4.3 above, the mean ENVDi for OP and NOP PLCs is 0.20 and 0.12 respectively. Both OP and NOP PLCs share the same median of 0.10 (only 1 item disclosed of a possible 10) demonstrating that most Malaysian PLCs have low environmental disclosure. This finding is in line with prior Malaysian research (Ramasamy and Hung 2004; Keng, Roper, and Kearins 2007; Ghazali 2007; Othman and Ameer 2009; Asria 2010).

A paired samples T-Test is conducted to determine the overall significance of the difference in environmental disclosure between OP and NOP PLCs.

The results of the paired samples T-Test in Table 4.4 below shows that there is a significant difference in ENVDi for OP PLCs (M=0.20, SD=0.22) compared to ENVDi for NOP PLCs (M=0.12, SD=0.17) at P<.001 (2-tailed) level.

Based on the findings from prior studies (Brown and Deegan 1998; Neu, Warsame, and Pedwell 1998; Bewley and Li 2000; Cormier and Magnan 2003), industries that attract a large amount of media attention are associated with higher levels of environmental disclosure. The oil palm industry has received a lot of media attention and hence, public attention regarding the danger of oil palm plantation to the environment (Lian and Wilcove 2008; Fitzherbert et al. 2008; Man et al. 2009). Thus, environmental disclosure differs between industry types.

Table 4.4: Paired samples statistics for ENVDi (OP) and ENVDi (NOP)

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
ENVDi(OP)	0.196	165	0.217	0.017
ENVDi(NOP)	0.115	165	0.171	0.013

Paired Samples Correlations

	N	Correlation	Sig.
ENVDi(OP) & ENVDi(NOP)	165	.274	.000

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Lower	95% Confidence Upper			
ENVDi (OP) - ENVDi (NOP)	0.081	0.236	0.018	0.045	0.118	4.416	164	0.000

Table 4.5 below shows the results of ENVDi for both OP and NOP PLCs for the years 2005-2009. The table reveals a gradual increase in disclosure levels for both company types over the sample period, albeit from a low base.

Table 4.5: Environmental disclosure index score for oil palm and non-oil palm PLCs (2005-2009)

Oil palm companies

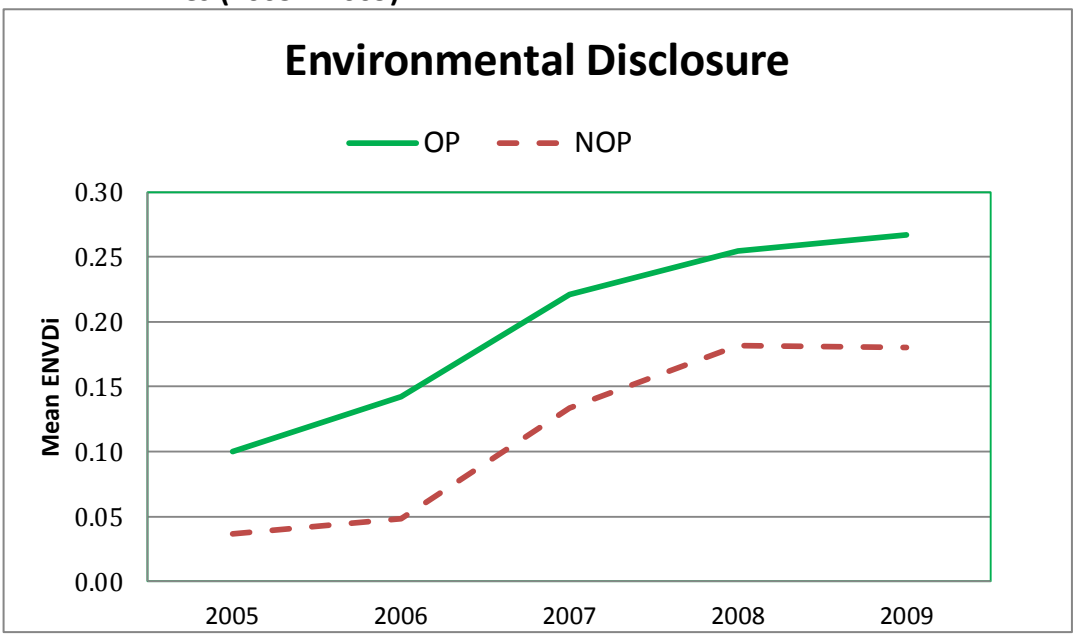
	2005	2006	2007	2008	2009
N	33	33	33	33	33
Range	0.70	0.70	0.70	0.70	0.70
Minimum	0.00	0.00	0.00	0.00	0.00
Maximum	0.70	0.70	0.70	0.70	0.70
Mean	0.10	0.14	0.22	0.25	0.27
Median	0.00	0.10	0.10	0.10	0.10
Std. Deviation	0.19	0.19	0.22	0.22	0.22

Non-oil palm companies

	2005	2006	2007	2008	2009
N	33	33	33	33	33
Range	0.60	0.60	0.70	0.70	0.70
Minimum	0.00	0.00	0.00	0.00	0.00
Maximum	0.60	0.60	0.70	0.70	0.70
Mean	0.04	0.05	0.13	0.18	0.18
Median	0.00	0.00	0.10	0.10	0.10
Std. Deviation	0.12	0.12	0.19	0.18	0.18

In conducting the trend analysis of environmental disclosure, the 5 years of data (2005-2009) of the sample companies (33 OP and 33 NOP) were averaged and a trend chart is plotted using the mean ENVDi against time. Chart 4.1 below shows an increasing trend in environmental disclosure from 2005 to 2009, in line with prior findings (ACCA 2005). The results also show that OP PLCs have higher environmental disclosure compared to NOP PLCs.

Chart 4.1: Trend in environmental disclosure index for oil palm and non-oil palm PLCs (2005 – 2009)



4.6.4.2 Independent variables: stakeholder power, strategic posture and economic performance

There are seven (7) independent and two (2) control variables in the study.

a. Stakeholder power

Shareholder power (SP)

The mean stakeholder power for oil palm and non-oil palm companies is 49.47% and 52.93% respectively and the median stakeholder power for oil palm and non-oil palm is 54.17% and 58.09% respectively (refer to Table 4.3), indicating majority company shares are controlled by substantial (>5%) shareholders and are therefore exhibiting concentrated shareholding. The scores for both oil palm and non-oil palm companies range from 0% to 90.86% and 8.65% to 92.22% respectively, indicating a wide range of shareholder power.

Prior Malaysian studies (Hossain, Tan, and Adams 1994; Ghazali 2007), have similarly found Malaysian PLCs have concentrated ownership.

Creditor power (CP)

Roberts (1992) identified creditor power as being proportionate to the degree to which the company relies on debt financing.

The level of leverage (measured as total debts/total assets) shows that there is a very wide range of leverage for both oil palm companies (0.14% to 83.26%) and non-oil palm companies (0.03% to 90.35%) – refer to Table 4.3. The mean leverage is 28.16% and 29.40% for oil palm and non-oil palm companies respectively and the median leverage for oil palm and non-oil palm companies is 26.73% and 25.94% respectively, indicating that most of the sample companies are not highly geared.

Government power (GP)

Government ownership is a strong feature in the Malaysian corporate sector, particularly evident in privatised entities (Ghazali 2007). Government-owned companies are more politically sensitive because the activities of these companies are under greater public scrutiny. Malaysia's Companies Act 1965, Section 69D (KPDNKK 2006) defines substantial shareholder as a person having an interest in not less than 5 percent of the nominal amount of the voting shares in a company and this criteria is used to measure government ownership in the sample companies.

Table 4.6 below indicates that 37.6% of OP PLCs have substantial government shareholding while 33.3% of NOP PLCs have substantial government shareholding.

Table 4.6: Companies and government power cross-tabulation

			Government Power (GP)		Total
			No GP	Substantial GP	
Companies	Oil Palm Companies	Count	103	62	165
		% within Companies	62.4%	37.6%	100.0%
		% within GP	48.4%	53.0%	50.0%
		% of Total	31.2%	18.8%	50.0%
		Std. Residual	-.3	.5	
	Non-Oil Palm Companies	Count	110	55	165
		% within Companies	66.7%	33.3%	100.0%
		% within Government	51.6%	47.0%	50.0%
		% of Total	33.3%	16.7%	50.0%
		Std. Residual	.3	-.5	
Total		Count	213	117	330
		% within Companies	64.5%	35.5%	100.0%
		% within Government	100.0%	100.0%	100.0%
		% of Total	64.5%	35.5%	100.0%

A chi-square test for independence (with Yates Continuity Correction) indicates there is no statistically significant association between types of companies and government ownership, χ^2 (1, n=330)=. 48, p=.49, phi=-.04.

b. Strategic posture

The following 3 strategic posture variables are all categorical variables and the chi-square test for independence is applied to determine if there is a relationship between types of companies (OP and NOP) and SEC, ISO 14001 and EC.

Social/environmental concern (SEC)

The measure for social/environmental concern is its expression in the mission/vision/Chairman's statement. As shown in Table 4.7 below, 57% of OP PLCs have social/environmental concern in their mission/vision/Chairman's statement compared to 39.4% for NOP PLCs.

Table 4.7: Companies and social/environmental concern cross-tabulation

			Social/Environmental Concern (SEC)		Total
			No SEC	SEC	
Companies	Oil Palm Companies	Count	71	94	165
		% within Companies	43.0%	57.0%	100.0%
		% within SEC	41.5%	59.1%	50.0%
		% of Total	21.5%	28.5%	50.0%
		Std. Residual	-1.6	1.6	
	Non-Oil Palm Companies	Count	100	65	165
		% within Companies	60.6%	39.4%	100.0%
		% within SEC	58.5%	40.9%	50.0%
		% of Total	30.3%	19.7%	50.0%
		Std. Residual	1.6	-1.6	
Total		Count	171	159	330
		% within Companies	51.8%	48.2%	100.0%
		% within SEC	100.0%	100.0%	100.0%
		% of Total	51.8%	48.2%	100.0%

A chi-square test for independence (with Yates Continuity Correction) indicates a statistically significant association between types of companies and social/environmental concern, χ^2 (1, n=330)=9.52, p=.002, phi=-.18. It confirms that OP companies are statistically significantly more likely to disclose environmental concern in the mission/vision/Chairman's statement.

ISO 14001 certification

The ISO 14001 certification implies an active posture for environmental compliance. Table 4.8a below shows that 20% of OP PLCs possess the ISO 14001 certification and 14.5% of NOP PLCs possess the ISO 14001 certification.

Table 4.8: Companies and ISO 14001 cross-tabulation

			ISO 14001		Total
			No ISO 14001	ISO 14001	
Companies	Oil Palm Companies	Count	132	33	165
		% within Companies	80.0%	20.0%	100.0%
		% within ISO 14001	48.4%	57.9%	50.0%
		% of Total	40.0%	10.0%	50.0%
		Std. Residual	-.4	.8	
	Non-Oil Palm Companies	Count	141	24	165
		% within Companies	85.5%	14.5%	100.0%
		% within ISO 14001	51.6%	42.1%	50.0%
		% of Total	42.7%	7.3%	50.0%
		Std. Residual	.4	-.8	
Total		Count	273	57	330
		% within Companies	82.7%	17.3%	100.0%
		% within ISO 14001	100.0%	100.0%	100.0%
		% of Total	82.7%	17.3%	100.0%

A Chi-square test for independence (with Yates Continuity Correction) indicates statistically insignificant association between types of companies and possession of ISO 14001 certification, χ^2 (1, n=330)=1.36, p=.24, phi=-.072.

Environmental committee (EC)

EC is a categorical variable with a 1 given to those companies that mentioned having an environmental committee or department and 0 otherwise.

The results in Table 4.9 below show that 19.4% of OP PLCs and 7.9% of NOP PLCs have an environmental committee or department.

Table 4.9: Companies and environmental committee cross-tabulation

			Environmental Committee (EC)		Total
			No EC	EC	
Companies	Oil Palm Companies	Count	133	32	165
		% within Companies	80.6%	19.4%	100.0%
		% within EC	46.7%	71.1%	50.0%
		% of Total	40.3%	9.7%	50.0%
		Std. Residual	-.8	2.0	
	Non-Oil Palm Companies	Count	152	13	165
		% within Companies	92.1%	7.9%	100.0%
		% within EC	53.3%	28.9%	50.0%
		% of Total	46.1%	3.9%	50.0%
		Std. Residual	.8	-2.0	
Total		Count	285	45	330
		% within Companies	86.4%	13.6%	100.0%
		% within EC	100.0%	100.0%	100.0%
		% of Total	86.4%	13.6%	100.0%

A Chi-square test of independence (with Yates Continuity Correction) confirms a statistically significant association between types of companies and environmental committee or department, χ^2 (1, n=330)=8.34, p=.004, phi=-.168. It indicates that OP companies are more likely to establish an environmental committee.

c. Economic performance

Return on asset (ROA)

The ROA as a measure of economic performance has been commonly used in prior studies (Kent and Chan 2009; Magness 2006).

The mean ROA for oil palm and non-oil palm companies is 6.57% and 5.76% respectively and the median ROA for oil palm and non-oil palm is 5.83% and 3.81% respectively (refer to Table 4.3). The ROA scores for oil palm companies range from -8.26% to 35.95% and for non-oil palm companies, the ROA range from -9.83% to 31.31% both indicating clustered distribution as shown by the small standard deviation of 6.09% and 8.68% respectively.

d. Control variables

As with Roberts (1992), Magness (2006) and Kent and Chan (2009) studies, control variables included in this study are size (revenues) and age of companies. Prior research suggests that these control variables are likely to act as influential variables and should be controlled for in empirical tests (Cochran and Wood 1984; Ullmann 1985; Cowen, Ferreri, and Parker 1987).

Size

In this study, oil palm and non-oil palm companies are matched on size, measured in terms of revenues. The variable size has been transformed using natural logarithm.

The mean LOGSIZE for oil palm and non-oil palm companies is MYR (Malaysian Ringgit) 4.01 and MYR 3.91 million respectively and the median revenue for both OP and NOP PLCs is MYR 4.18 and MYR 4.07 million respectively (refer to Table 4.3). A paired samples T-Test (refer to Table 4.10a below) shows that there is statistically insignificant difference in the mean LOGSIZE between the 2 groups. On the same note, a paired samples T-Test (refer to Table 4.10b below) conducted for the years 2005-2009 show that there is statistically insignificant difference in the mean LOGSIZE between OP and NOP PLCs, reflecting the effective matching of the company size.

Table 4.10a: Paired samples statistics for LOGSIZE (OP) and LOGSIZE (NOP)

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
LOGSIZEOP	4.011	165	1.778	0.138
LOGSIZENOP	3.907	165	1.757	0.137

Paired Samples Correlations

	N	Correlation	Sig.
LOGSIZEOP & LOGSIZENOP	165	.776	.000

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Lower	95% Confidence Upper			
LOGSIZEOP - LOGSIZENOP	0.104	1.182	0.092	-0.078	0.286	1.132	164	.259

Table 4.10b: Paired samples statistics for LOGSIZE (OP) and LOGSIZE (NOP) for years 2005-2009

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error
Pair 1	LOGSIZOP2009	4.139	33	1.751	.305
	LOGSIZENOP2009	4.150	33	1.739	.303
Pair 2	LOGSIZEOP2008	4.231	33	1.917	.334
	LOGSIZENOP2008	3.980	33	1.990	.346
Pair 3	LOGSIZEOP2007	4.016	33	1.845	.321
	LOGSIZENOP2007	4.046	33	1.806	.314
Pair 4	LOGSIZEOP2006	3.981	33	1.571	.274
	LOGSIZENOP2006	3.868	33	1.604	.279
Pair 5	LOGSIZEOP2005	3.688	33	1.848	.322
	LOGSIZENOP2005	3.491	33	1.673	.291

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	LOGSIZOP2009 & LOGSIZENOP2009	33	.999	.000
Pair 2	LOGSIZEOP2008 & LOGSIZENOP2008	33	.833	.000
Pair 3	LOGSIZEOP2007 & LOGSIZENOP2007	33	.998	.000
Pair 4	LOGSIZEOP2006 & LOGSIZENOP2006	33	.659	.000
Pair 5	LOGSIZEOP2005 & LOGSIZENOP2005	33	.326	.064

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Lower	95% Upper			
Pair 1	LOGSIZOP2009 - LOGSIZENOP2009	-.012	.060	.010	-.033	.010	-1.114	32	.273
Pair 2	LOGSIZEOP2008 - LOGSIZENOP2008	.250	1.132	.197	-.151	.652	1.271	32	.213
Pair 3	LOGSIZEOP2007 - LOGSIZENOP2007	-.030	.123	.021	-.073	.014	-1.376	32	.178
Pair 4	LOGSIZEOP2006 - LOGSIZENOP2006	.112	1.312	.228	-.353	.577	.491	32	.627
Pair 5	LOGSIZEOP2005 - LOGSIZENOP2005	.197	2.049	.357	-.530	.923	.552	32	.585

Age

Age is included in the model as a control for perceived stability and inherent risk. Older firms are expected to have less risk (Roberts 1992; Kent and Chan 2009). The mean age for oil palm and non-oil palm companies is 37 years and 24 years respectively and the median age for oil palm and non-oil palm companies is 35 years and 21 years respectively indicating that oil palm companies are older and therefore more established than non-oil palm companies (refer to Table 4.3).

The results also show that there is higher variability in the age data among oil palm companies evidenced from the larger standard deviation of 23 years compared to 13 years for non-oil palm companies.

4.6.5 Multivariate data analysis

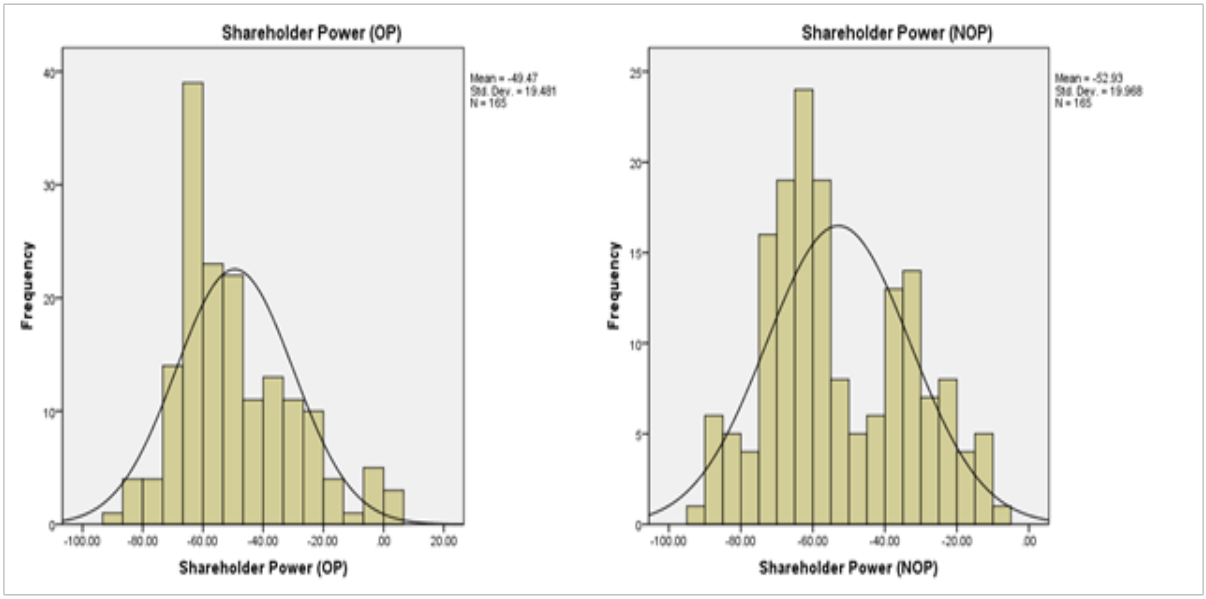
The association of stakeholder power, strategic posture and economic performance on environmental disclosure is examined using multiple regression.

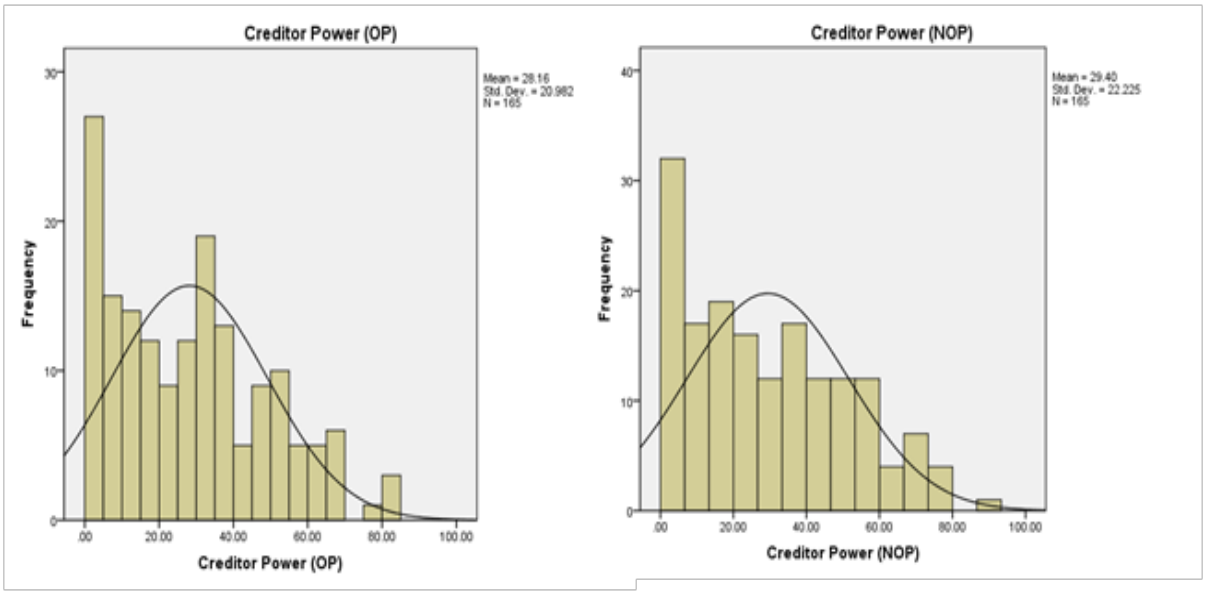
4.6.5.1 Checking for assumptions

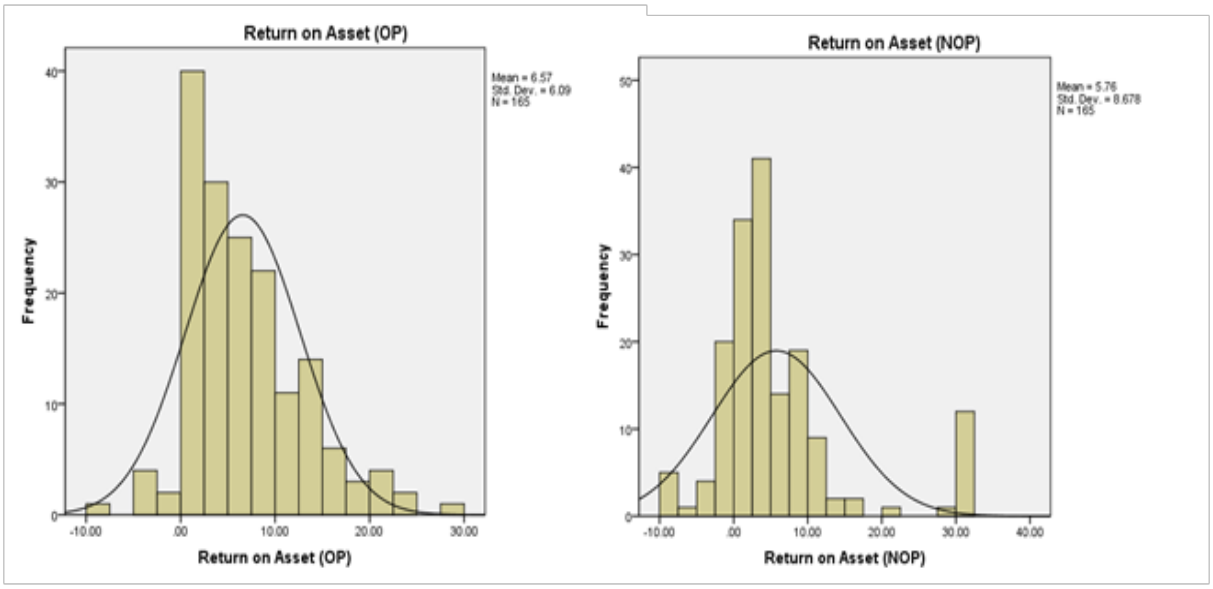
Normality

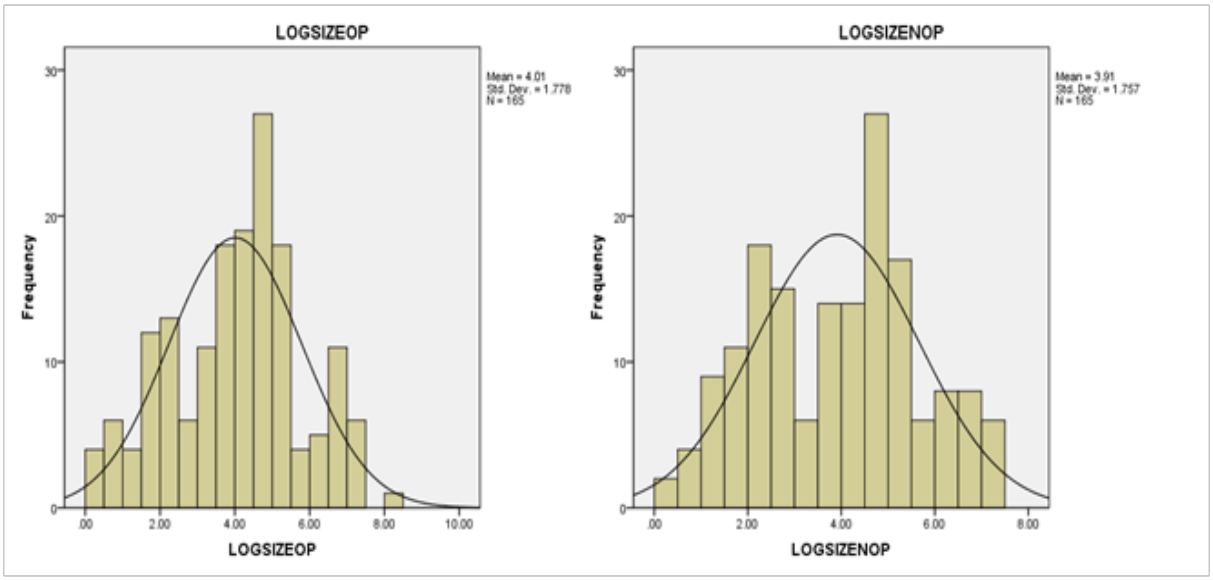
Normality is checked visually using frequency distribution. Histograms of the continuous variables - SP, CP, ROA, LOGSIZE and AGE are shown in Chart 4.2 below. SIZE has been transformed (LOGSIZE) in view of the non-normal distribution of the data. Normality of the data is acceptable since there is no serious skewness or kurtosis evident from the histograms.

Chart 4.2: Histograms of SP, CP, ROA, LOGSIZE and AGE in OP and NOP PLCs









Outliers

Outliers are checked using the Z-scores produced by SPSS. The Z-scores are a way of standardizing a data set by expressing the scores in terms of a distribution with a mean of 0 and a standard deviation of 1 (Field 2009, 102). Field (2009, 216) and Tabachnick and Fidell (2007, 128) define outliers as Z-score values above 3.29 (or less than -3.29). Examination of the SPSS output revealed that the highest Z-score observed is 2.94 and the lowest is -2.44, which are within the acceptable range.

Multicollinearity

The data is also checked for multicollinearity. The cut-off point for determining the presence of multicollinearity is a tolerance value of less than .10 and a VIF (variance inflation factor) above 10 (Field 2009, 224). The lowest tolerance for OP is .574 and the VIF ranges from 1.152 – 1.742. For NOP, the lowest tolerance is .416 and the VIF ranges from 1.104 – 2.401. There is no evidence of multicollinearity in the model.

Homogeneity of variance

Homogeneity of variance is the assumption that the spread of scores is roughly equal in different group of cases (Field 2009, 152). In large samples, Field (2009, 150) recommend the use of the variance ratio and using Hartley's F_{Max} critical values to determine homogeneity of variance. The variance ratio is derived by taking the biggest variance and dividing with the smallest variance. In the study, the values for the variance is obtained from the descriptive statistics output of SPSS.

Table 4.11: Variance ratio of oil palm and non-oil palm companies

	ENVDi	SP	CP	GP	SEC	ISO	EC	ROA	LOGSIZE	AGE
Variance (OP)	.047	379.503	440.236	.236	.247	.161	.157	37.093	3.161	415.237
Variance (NOP)	.029	391.807	493.946	.224	.240	.125	.091	65.303	3.088	219.569
Variance ratio	1.613	1.032	1.122	1.056	1.027	1.287	1.728	1.760	1.024	1.891

The variance ratio calculated for OP and NOP companies is compared against Hartley's F_{Max} critical values and for samples above 60, the values should be below 2, as indicated in the above table.

4.6.5.2 Pearson coefficient of correlation

The Pearson coefficient of correlation is used to measure the strength of association between two variables. A bivariate correlation is conducted for the pooled data of 33 oil palm and non-oil palm companies over 5 years to examine the relationship of the independent variables on the dependent variable (environmental disclosure).

The correlations table on OP PLCs (refer to Table 4.11a below) shows that ENVDi, as the dependent variable, correlate significantly with SP (-.272), GP (.361), SEC (.427), ISO 14001 (.696), EC (.356), LOGSIZE (.431) and ROA (.212) at the p<.001 level. Only two variables, CP (-.054) and AGE (.002) are not statistically significantly associated with environmental disclosure.

Table 4.12a: Pearson correlations matrix for oil palm companies

Variables	ENVDi	SP	CP	GP	SEC	ISO 14001	EC	ROA	LOGSIZE
SP	-.272**								
	(.000)								
CP	-.054	.096							
	(.247)	(.110)							
GP	.361**	-.175*	-.040						
	(.000)	(.012)	(.303)						
SEC	.427**	-.254**	.084	.245**					
	(.000)	(.000)	(.143)	(.001)					
ISO 14001	.696**	-.185**	.051	.206**	.282**				
	(.000)	(.009)	(.259)	(.004)	(.000)				
EC	.356**	.132*	-.052	.031	-.038	.330**			
	(.000)	(.045)	(.255)	(.347)	(.314)	(.000)			
ROA	.212**	-.116	-.323**	.306**	.087	.107	.000		
	(.003)	(.070)	(.000)	(.000)	(.133)	(.086)	(.500)		
LOGSIZE	.431**	-.139*	-.157*	.425**	.213**	.384**	.094	.333**	
	(.000)	(.038)	(.022)	(.000)	(.003)	(.000)	(.114)	(.000)	
AGE	.002	.099	-.255**	-.061	-.244**	-.064	.116	.009	.052
	(.488)	(.103)	(.000)	(.216)	(.001)	(.206)	(.069)	(.456)	(.254)

Note: The top number represents the correlation and the bottem number represents the level of significance.

* Correlation is significant at the 0.05 level (1-tailed).

** Correlation is significant at the 0.01 level (1-tailed).

The correlations table on NOP PLCs (refer to Table 4.12b below) shows that ENVDi, as the dependent variable, correlate significantly with SP (-.321), SEC (.337), EC (.781), ROA (.579), LOGSIZE (.451) and AGE (.253) at the p<.001 level. CP (.064), GP (.043) and ISO 14001 (-.087) are not statistically significantly associated with environmental disclosure.

Table 4.12b: Pearson correlations matrix for non-oil palm companies

Variables	ENVDi	SP	CP	GP	SEC	ISO 14001	EC	ROA	LOGSIZE
SP	-.321** (.000)								
CP	.064 (.208)	-.093 (.117)							
GP	.043 (.292)	-.120 (.062)	-.351** (.000)						
SEC	.337** (.000)	-.223** (.002)	.057 (.233)	.114 (.072)					
ISO 14001	-.087 (.132)	.055 (.240)	.044 (.287)	-.109 (.081)	.160* (.020)				
EC	.781** (.000)	-.169* (.015)	-.067 (.195)	.127 (.052)	.271** (.000)	-.121 (.061)			
ROA	.579** (.000)	-.139* (.037)	-.269** (.000)	.099 (.102)	.215** (.003)	-.102 (.096)	.657** (.000)		
LOGSIZE	.451** (.000)	-.314** (.000)	.219** (.002)	.115 (.071)	.292** (.000)	-.151* (.027)	.464** (.000)	.469** (.000)	
AGE	.253** (.001)	-.273** (.000)	.272** (.000)	-.170* (.014)	.178* (.011)	-.001 (.496)	.062 (.214)	-.026 (.368)	.251** (.001)

Note: The top number represents the correlation and the bottem number represents the level of significance.

* Correlation is significant at the 0.05 level (1-tailed).

** Correlation is significant at the 0.01 level (1-tailed).

4.6.5.3 Hierarchical regression analysis

Hierarchical multiple regression (also referred to as sequential regression) was employed to examine the association of the independent variables to the dependent variable. The environmental disclosure model (based on Ullmann's three-dimensional stakeholder model) comprises 3 dimensions of stakeholder power, strategic posture and economic performance. Each dimension of the model is treated as a block in hierarchical regression. With hierarchical regression, the researcher determines the entry of the variables. Dummy variables have also been included for time as 5 years of data (2005-2009) were collected. F-tests are used to compute the significance of each added variable (or set of variables).

In running the regression, the first block comprises the control variables of LOGSIZE, AGE and time dummies (2005, 2006, 2007 and 2008); the second block comprises the stakeholder dimension of shareholder power, creditor power and government power; the third block comprises the strategic posture dimension of social/environmental concern, ISO 14001 and environmental committee; the fourth block comprise the economic performance dimension of ROA. A total of 4 models is produced by SPSS when the independent variables are entered sequentially beginning from block 1 to block 4.

The regression analysis on the environmental disclosure index for oil palm companies (refer to Table 4.13a below) show that SEC, ISO 14001 and EC are making a statistically significant contribution to the model at the P<.001 level. GP is making a statistically significant contribution to the model at the p<.05 level. Both control variables, LOGSIZE and AGE are not statistically significant.

Table 4.13a: Regression analysis of independent variables on the extent of environmental disclosure (ENVDi) for oil palm companies

	Standardized Coefficients	t	Sig. (1-tailed)	Collinearity Statistics	
	Beta			Tolerance	VIF
(Constant)		.542	.294		
LOGSIZE	.071	1.282	.101	.668	1.498
AGE	.043	.867	.194	.846	1.182
SP	-.050	-1.032	.152	.868	1.152
CP	-.012	-.237	.407	.800	1.250
GP	.160	3.029	.001	.738	1.355
SEC	.185	3.524	.000	.746	1.340
ISO 14001	.486	8.975	.000	.699	1.431
EC	.241	4.692	.000	.777	1.287
ROA	.031	.583	.281	.737	1.357

Notes:

*Time dummy variables (2005, 2006, 2007 and 2008) were included but the results are not included in the table for brevity.

N=165 Adjusted R^2=.664 F=25.955 P<.001

Where:

ENVDi	=	Environmental disclosure index (measured using a ten-point-scoring of environmental factors);
SP	=	Shareholder power (measured as the proportion of ownership of company held by shareholders holding 5% or more of total shareholding);
CP	=	Creditor power (total debts/total assets) of company;
GP	=	Government power (1 for companies with substantial government ownership; 0 otherwise);
SEC	=	Social/environmental concern (1 for companies with social/environmental concern in the mission/vision/ Chairman's statement; 0 otherwise);
ISO14001	=	ISO 14001 certification (1 for companies with ISO 14001 or RSPO certification; 0 otherwise);
EC	=	Environmental committee (1 for companies with environmental committee or department; 0 otherwise);
ROA	=	Return on asset (profit after tax/total assets) of company;
LOGSIZE	=	Natural logarithm of size (revenue) of company; and
AGE	=	Age of company since incorporation.

The regression analysis on the environmental disclosure index for non-oil palm companies (refer to Table 4.13b below) show that SP, EC and ROA are making a statistically significant contribution to the model at the P<.001 level. CP and AGE are making a statistically significant contribution to the model at the p<.05 level. GP, SEC, ISO 14001 and LOGSIZE are not statistically significant.

Table 4.13b: Regression analysis of independent variables on the extent of environmental disclosure (ENVDi) for non-oil palm companies

	Standardized Coefficients	t	Sig. (1-tailed)	Collinearity Statistics	
	Beta			Tolerance	VIF
(Constant)		-.502	.308		
LOG SIZE	-.075	-1.345	.090	.531	1.882
AGE	.135	2.968	.002	.801	1.249
SP	-.152	-3.400	.000	.828	1.208
CP	.127	2.474	.007	.624	1.602
GP	.010	.210	.417	.743	1.346
SEC	.029	.638	.262	.775	1.290
ISO 14001	-.023	-.530	.298	.906	1.104
EC	.601	10.512	.000	.504	1.985
ROA	.213	3.380	.000	.416	2.401

Notes:

*Time dummy variables (2005, 2006, 2007 and 2008) were included but the results are not included in the table for brevity.

N=165 Adjusted R^2=.730 F=35.091 P<.001

Refer to Table 4.13a for a description of the variables

4.6.5.4 Assessing the regression model

Standardised residuals

In conjunction with assessing for outliers that may bias the model, the standardised residuals from the SPSS output can reveal the accuracy of the model in terms of the model fit and also generalisability.

Field (2009, 216) gave some general rules for standardised residuals: "(1) standardised residuals with an absolute value greater than 3.29 are cause for concern because in an average sample case a value this high is unlikely to happen by chance; (2) if more than 1% of sample cases have standardised residuals with an absolute value greater than 2.58 there is evidence that the level of error within the model is unacceptable (the model is a poor fit of the sample data); and (3) if more than 5% of cases have standardised residuals with an absolute number greater than

1.96 then there is evidence that the model is a poor representation of the actual data."

Based on analysis of the SPSS output, there is no case with absolute value greater than 3.29 (or less than -3.29). The percentage of sample cases with absolute values greater than 2.58 is 0.60% and the percentage of sample cases with absolute values greater than 1.96 is 2.70%, all within the acceptable range as defined above.

Influential cases

Influential cases are those cases which can exert undue influence over the parameters of the model (Field 2009, 217). In order to assess for influential cases, Cook's distance, which is a measure of the overall influence of a case on a model, has been employed to determine values greater than 1 which are cause for concern. In assessing the SPSS output, there is no Cook's distance greater than 1 and the highest value is .14.

The Mahalanobis distance, which measure the distance of cases from the means (Field 2009, 218), can be determined using Barnett and Lewis table of critical values, depending on the number of predictors and sample size. For sample size above 100, values above 20 are cause for concern. For this study, the highest Mahalanobis distance is 18.38, which is within the acceptable range defined in Barnett and Lewis table of critical values.

Independent errors

For any two observations in regression, the residuals should be uncorrelated or independent. This assumption can be tested using the Durbin-Watson test which tests for serial correlations between errors. According to Field (2009, 220), values less than 1 or greater than 3 are cause for concern and a value of 2 means that the residuals are uncorrelated. The Durbin-Watson test statistics are obtained from the

model summary of the regression. The Durbin-Watson is 2.069 for OP and 2.080 for NOP, indicating no statistically significant correlation in the residuals.

4.6.6 Determinants of environmental disclosure of OP and NOP companies

Based on the results obtained from the regression analysis, the determinants of environmental disclosure in OP PLCs are government power (GP), social/environmental concern (SEC), ISO 14001 certification and environmental committee (EC). The determinants of environmental disclosure for NOP PLCs are shareholder power (SP), creditor power (CP), environmental committee (EC), ROA and Age of companies. These results are summarised in Table 4.14 below.

Table 4.14: Determinants of environmental disclosure of oil palm and non-oil palm companies

Dimension	Oil Palm (OP)	Non-Oil Palm (NOP)
Stakeholder power	Government power (GP)	-
	-	Shareholder power (SP)
	-	Creditor power (CP)
Strategic posture	Social/environmental concern (SEC)	-
	ISO 14001	-
	Environmental committee (EC)	Environmental committee (EC)
Economic performance	-	Return on assets (ROA)
Control variable	-	Age

4.6.7 Ullmann's contingency framework

According to Ullmann (1985), when stakeholder power is high, companies with active strategic posture and good economic performance will deliberately make effort to satisfy their stakeholder's demands through actual social (environmental) performance and its disclosure (Hypothesis H4 - refer to Figure 3.4, Chapter 3 to see a modified version of Ullmann's contingency framework).

Companies are selected based on the following selection process:

In order to carry out this test, a group of companies is selected which score in the top 50% for stakeholder power AND strategic posture AND economic performance. To do this, companies with any 2 or more stakeholder variables in the top 50th percentile (SP, CP or GP), any 2 or more strategic posture variables in the top 50th percentile (SEC, ISO 14001 or EC) and economic performance variable in the top 50th percentile (ROA) are selected.

Companies that do not satisfy all 3 criteria of stakeholder power AND strategic posture AND economic performance will form the second group.

Table 4.15 below shows an excerpt of the selection of companies for grouping. Company 23 would fall under Group 1 because it satisfies 2 out of 3 stakeholder power variables, 2 out of 3 strategic posture variables and the economic performance variable. The remaining companies (21, 22, 24 and 25) will fall under Group 2. Group 1 companies satisfy all 3 criteria of high stakeholder power, active strategic posture and good economic performance and hence high environmental disclosure is expected (Situation 1 of Ullmann's modified contingency framework - refer to Figure 3.4, Chapter 3). Group 2 companies do not satisfy all the 3 criteria of high stakeholder power, active strategic posture and good economic performance and hence low environmental disclosure is expected (Situations 2-8 of Ullmann's modified contingency framework).

Table 4.15: Excerpt of companies for grouping (Testing Ullmann's Contingency Framework)

Company	ENVDi	Stakeholder power			Strategic posture			Economic performance	Group
		SP	CP	GP	SEC	ISO14001	EC	ROA	
21	0.3	-63	5.00	0	0	0	0	8	2
22	0.1	-65	12.40	0	1	0	0	9	2
23	0.7	**-64**	14.39	**1**	**1**	**1**	0	**9**	1
24	0.4	-82	32.10	0	0	1	0	19	2
25	0.5	-36	27.50	1	1	1	0	6	2

An independent samples T-Test is not undertaken because of the very small number of observations for Group 1, representing only 3 companies each for both OP and NOP, which would yield an unreliable T-Test results.

4.7 DISCUSSION

4.7.1 Environmental disclosure model

The purpose of this quantitative phase was to examine the association of stakeholder power, strategic posture and economic performance and environmental disclosure in Malaysian oil palm companies and non-oil palm companies. The model is tested with environmental disclosure (ENVDi) shown as a function of stakeholder power (SP, CP and GP), strategic posture (SEC, ISO 14001 and EC), economic performance (ROA) and the control variables (LOGSIZE and AGE).

8 hypotheses were developed to examine the association of stakeholder power, strategic posture and economic performance to environmental disclosure of Malaysian oil palm and non-oil palm PLCs.

A summary of the hypotheses testing results is shown in Table 4.16 below to aid in the ensuing discussion

Table 4.16: Summary of hypotheses testing - oil palm and non-oil palm companies

Hypotheses	Oil Palm	Non-Oil Palm
Stakeholder Power		
Proposition 1: The power of the company's stakeholders is associated with the extent of environmental disclosure.		
H1a: The degree of shareholder concentration is negatively associated with the extent of environmental disclosure of the company.		Supported
H1b: The level of leverage (total debts/total assets) is positively associated with the extent of environmental disclosure of the company.		Supported
H1c: Substantial government ownership is positively associated with the extent of environmental disclosure of the company.	Supported	
Strategic posture		
Proposition 2: The strategic posture adopted by the company is positively associated with the extent of environmental disclosure.		
H2a: Social or environmental concern in the vision/mission statement or Chairman's statement is positively associated with the extent of environmental disclosure of the company.	Supported	
H2b: ISO 14001 certification is positively associated with the extent of environmental disclosure of the company.	Supported	
H2c: A board or executive level social or environmental committee is positively associated with the extent of environmental disclosure of the company.	Supported	Supported
Economic performance		
Proposition 3: The economic performance of the company is positively associated with the extent of environmental disclosure.		
H3: Return on assets (ROA) is positively associated with the extent of environmental disclosure of the company.		Supported
Ullmann's contingency framework		
H4: Companies which exhibit high stakeholder power, an active strategic posture and good economic performance will also display high levels of voluntary environmental disclosure.		

4.7.1.1 Stakeholder power

Stakeholder power, the first dimension of Ullmann (1985) stakeholder model, measures the ability of stakeholders to influence corporate management. The 3

stakeholder power selected for examination are shareholder power, creditor power and government power (refer to Table 4.16 above).

Shareholder power

This study proposes that the degree of shareholder concentration would have a negative influence on environmental disclosure. The regression analysis results show that for both the oil palm and non-oil palm PLCs, the sign is negative implying that shareholder concentration is negatively related to environmental disclosure. However, the result is not statistically significant in oil palm but statistically significant in non-oil palm PLCs.

The mean shareholder power for oil palm and non oil palm PLCs is 49.47% and 52.93% respectively showing a very small difference in shareholder power for the 2 groups (refer to Table 4.3). The median of 54.17% for OP and 58.09% for NOP PLCs indicates that majority company shares are controlled by substantial (>5%) shareholders and are therefore exhibiting highly concentrated shareholding. According to Ghazali (2007), owner managed companies is a common business attribute in Malaysia, explaining the high shareholding concentration in the sample companies.

Ghazali also commented that shareholder concentration has its limit in explaining disclosure; he suggested that the different types of ownership need to be distinguished in examining the impact of ownership structure on voluntary disclosure (Ghazali 2007). This may explain the differences in the results of shareholder power obtained for oil palm and non-oil palm companies.

The results of the hypothesis testing support the negative influence of shareholder concentration on environmental disclosure in oil palm PLCs but this is supported in non-oil palm PLCs. This finding is consistent with the study by Roberts (1992) and Elijido-Ten (2009) which found that shareholder power has no statistically significant influence on environmental disclosure.

Creditor power

This study proposes that when a company relies on debt financing, they will disclose more environmental information to be perceived as a company with low risk. The results of the hypothesis testing indicated that there is no statistically significant evidence to support the positive influence of level of leverage on environmental disclosure in oil palm PLCs. This finding is consistent with the findings in Kent and Chan (2009) and Elijido-Ten (2009) that the level of leverage has no influence on environmental disclosure.

When tested on non-oil palm PLCs, the results of the hypothesis testing indicated that there is statistically significant evidence to support the positive influence of level of leverage on environmental disclosure in non-oil palm PLCs, consistent with the study by Roberts (1992). This suggests that creditors do have influence over disclosure levels as hypothesised.

The mean creditor power for oil palm and non oil palm PLCs is 28.16% and 29.40% respectively showing no difference in creditor power for the 2 groups (refer to Table 4.3). The differing results are therefore not due to differences in the level of leverage between the groups.

Government power

This study proposes that substantial government ownership in a company would have a positive influence on environmental disclosure. The results of the hypothesis testing indicated that there is statistically significant evidence to support the positive influence of government ownership on environmental disclosure in oil palm PLCs and is consistent with the study by Roberts (1992), Kent and Chan (2009) and Elijido-Ten (2009).

However, when tested on non-oil palm PLCs, there is no statistically significant evidence to support the positive influence of government ownership on

environmental disclosure. A cross-tabulation of types of companies and government power (refer to Table 4.6) indicates that 37.6% of oil palm PLCs have substantial government shareholding while 33.3% of non-oil palm PLCs have substantial government shareholding. A chi-square test for independence (with Yates Continuity Correction) indicates no statistically significant association between types of companies and government ownership, χ^2 (1, n=330)=. 48, p=.49, phi=-.04. The differing results are therefore not due to differences in government ownership between the groups.

A possible explanation for this difference is that the oil palm industry has received a lot of media attention and hence, public attention regarding the danger of oil palm plantation to the environment (Lian and Wilcove 2008; Fitzherbert et al. 2008; Man et al. 2009). The government's involvement and role in the oil palm business goes beyond being a substantial shareholder/owner but to fulfil economic, social and political agendas for the country.

Differing measures of government power may explain the different findings when compared to prior studies in non-oil palm companies. Roberts (1992) used political action committee (PAC) contributions to manage political risks. Therefore higher PAC contribution is associated with more voluntary disclosure. Kent and Chan (2009) used evidence of prosecution under the Environmental Protection Act to proxy for regulator/government power. Elijido-Ten (2009) used firms belonging to environmentally sensitive industry to proxy for government power. In these prior studies, government power is associated with more disclosure, as in this study for oil palm companies. Using alternative measures for government power may yield more consistent results between the 2 groups.

4.7.1.2 Strategic posture

The second dimension in Ullmann (1985) stakeholder model, strategic posture, captures how corporate management responds to stakeholder's social demands. An active posture is employed when managers try to influence their relationship

with their stakeholders so that an optimal level of interdependence can be achieved (Ullmann 1985).

This study used three proxies (all three proxies are dichotomous variables): 1) the presence/absence of social/environmental concern in the vision/mission or Chairman's statement; 2) the presence/absence of ISO 14001 certification, and 3) the presence/absence of an environmental committee/ department.

Social/environmental concern

This study proposes that the presence of social or environmental concerns in the vision/mission statement or Chairman's statement would have a positive influence on environmental disclosure. The results of the hypothesis testing indicated that there is statistically significant evidence to support the positive influence of social or environmental concerns on environmental disclosure in oil palm PLCs. This is consistent with the study by Kent and Chan (2009) and Elijido-Ten (2009) who similarly find that social or environmental concerns in the vision/mission statement or Chairman's statement of a company has a positive influence on environmental disclosure. However, when tested on non-oil palm PLCs, the results of the hypothesis testing indicated that there is no statistically significant evidence to support the positive influence of social or environmental concern on environmental disclosure.

A cross-tabulation between types of companies and social/environmental concern (refer to Table 4.7) show that 57% of OP PLCs have social/environmental concern in their mission/vision or Chairman's statement while only 39.4% of NOP PLCs disclose social/environmental concern in their mission/vision or Chairman's statement. A chi-square test for independence (with Yates Continuity Correction) indicates a statistically significant association between types of companies and social/environmental concern. The differing results may therefore be due in part to the statistically significantly lower presence of social/environmental concern in the mission/vision or Chairman's statement between the groups.

ISO 14001 certification

Possession of ISO 14001 certification is expected to have a positive influence on environmental disclosure in oil palm PLCs. The results of the hypothesis testing indicated that there is statistically significant evidence to support the positive influence of ISO 14001 certification in oil palm PLCs, consistent with Elijido-Ten (2009) but not in non-oil palm PLCs. The literature supports the former finding with Yusoff, Yusoff, and Lehman (2007) in their study on the reporting behaviour of ISO 14001 accredited companies in Malaysia which reveals that all the ISO companies made some form of disclosure compared to the non-ISO companies. This implies that the ISO 14001 certification has put pressure on the companies to disclose environmental information in their annual reports.

Hypothesis H2b is supported by oil palm PLCs but not supported by non-oil palm PLCs. Chi-square statistics shows no statistically significant association between types of company and the possession of ISO 14001 certification.

According to Kent and Chan (2009) and Elijido-Ten (2009), shareholders and creditors (statistically significant stakeholders for non-oil palm companies) do not demand disclosure because of the very low level of environmental awareness in Malaysia. This might explain why possession of the ISO 14001 certification is not statistically significant in influencing disclosure in non-oil palm companies. The government being the important stakeholder for oil palm PLCs, would call for every possible measure to build the tainted image of the oil palm industry.

Environmental committee/department

The presence of a board or executive level social or environmental committee or department is hypothesised to have a positive influence on environmental disclosure. The results of the hypothesis testing indicated that there is a statistically significant evidence to support the positive influence of the presence

of a board or executive level social or environmental committee or department in both oil palm and non-oil palm PLCs. This is consistent with previous studies by Roberts (1992), Kent and Chan (2009) and Elijido-Ten (2009) that a board or executive level social or environmental committee or department will positively influence environmental disclosure.

4.7.1.3 Economic performance

This study proposes that ROA (a measure of economic performance) would have a positive influence on environmental disclosure. When tested on non-oil palm PLCs, the results of the regression indicate that there is a statistically significant evidence to support the positive influence of ROA on environmental disclosure in non-oil palm PLCs (refer to Table 4.13b). For oil palm PLCs, the evidence is less convincing with no statistically significant finding; however the coefficient for ROA is in the expected direction.

Prior studies (Patten 1991; Kent and Chan 2009; Magness 2006; Elijido-Ten 2009) using the ROA as a measure of economic performance, found that profitability is not a factor that influences disclosure.

According to Patten (1991), Williams (1999) and Ghazali (2007), voluntary disclosure is more closely related to public pressure rather than the market place or economic pressure, which is consistent with the findings in oil palm PLCs.

Prior studies (Brown and Deegan 1998; Neu, Warsame, and Pedwell 1998; Bewley and Li 2000; Cormier and Magnan 2003) found that industries that attract a large amount of media attention are associated with higher levels of environmental disclosure. In this respect, the oil palm industry fits into this category of industry that has to deal with a lot of negative press due to aggressive media campaigns by NGOs calling for the boycott of oil palm products (Lian and Wilcove 2007); oil palm plantations have been blamed for causing the greatest threat to biodiversity in Southeast Asia. Disclosing more environmental information is therefore a

strategy to shape stakeholder impressions. This is why oil palm companies are seen to be doing more for the environment regardless of their economic performance, especially if the government is a significant and important stakeholder. According to Ghazali, the government has social objectives to fulfil rather than simply profit driven (Ghazali 2007).

Prior studies found that other measures of economic performance such as return on equity (ROE) and systematic risk (Roberts 1992), annual stock returns (Al-Tuwaijri, Christensen, and Hughes II 2004) and organisational slack (Husillos and Álvarez-Gil 2008) have yielded positive results. Perhaps, a different measure of economic performance might yield more consistent results between the groups.

4.7.1.4 Ullmann's contingency framework

According to Ullmann (1985), when stakeholder power is high, companies with active strategic posture and good economic performance will deliberately make effort to satisfy their stakeholder's demands through actual social (environmental) performance and its disclosure (Hypothesis H4 - refer to Figure 3.4, Chapter 3 to see a modified version of Ullmann's contingency framework).

The 3-way interaction occurs when all three areas of stakeholder power, strategic posture and economic performance are aligned. This condition (high stakeholder power, active strategic posture and good environmental performance) only occurred in 3 companies for both OP and NOP, rendering it impossible to effectively model and appropriately test this condition.

This has implication for those stakeholders (particularly regulators) interested in increasing the level of voluntary disclosure of companies. It suggests that while individual pressure by stakeholders to encourage disclosure may have some impact as shown in the regression results where government power is statistically significant for OP companies and shareholder power and creditor power is statistically significant for NOP companies, it is only when all three areas of

stakeholder power, strategic posture and economic performance are aligned that environmental disclosure is maximised. This may explain the apparent decline in environmental disclosure (refer to Chart 4.1) during the 2008-09 period following a sustained increase in prior years.

4.7.2 Overview of the explanatory power of the environmental disclosure model

Results from the regression analysis revealed that the explanatory power of the environmental disclosure model is 66.4% per cent when the dependent variable is OP companies and 73% when the dependent variable is NOP companies.

Table 4.17 below shows a comparison of the explanatory power of Ullmann's stakeholder model against six (6) related studies - Roberts (1992), Kent and Chan (2009), Al-Tuwaijri, Christensen, and Hughes II (2004), Magness (2006), Husillos and Álvarez-Gil (2008), Elijido-Ten (2009) including this study. A more detailed definition of the dependent and explanatory variables, and sample size used in these studies is available in APPENDIX 3.

Table 4.17: Comparison of explanatory power of Ullmann's stakeholder model on environmental disclosure

Studies	Voluntary disclosure investigated	Sample size	R/Adjusted R^2
Roberts (1992)	Levels of social corporate disclosure	80	0.296
Al-Tuwaijri, Christensen, and Hughes II (2004)	Environmental disclosure, environmental performance and economic performance (endogenous)	198	
Magness (2006)	Extent of environmental disclosure	41	0.330
Husillos and Alvarez-Gill (2008)	Enviromental performance	135	0.218
	Environmental disclosure		0.018
Kent and Chan (2009)	Quality of environmental disclosure	102	0.660
	Quantity of environmental disclosure	102	0.530
Elijido-Ten (2009)	Quality of environmental disclosure	79	0.237
	Quantity of environmental disclosure	79	0.188
This study	Extent of environmental disclosure	165	0.664
	Extent of environmental disclosure	165	0.730

4.8 SUMMARY

The extent of environmental disclosure (ENVDi) of OP and NOP PLCs were measured using a ten-point-scoring of environmental factors. The mean ENVDi of OP and NOP PLCs is 0.20 and 0.12 respectively, with OP PLCs having a statistically significantly higher environmental disclosure compared to NOP PLCs. The results also confirm the relatively low levels of environmental disclosure across industries noted in previous studies (Ramasamy and Hung 2004; Keng, Roper, and Kearins 2007; Ghazali 2007; Othman and Ameer 2009; Asria 2010; ACCA 2005).

A regression analysis was conducted to examine the association of stakeholder power, strategic posture and economic performance (based on Ullmann's Three-Dimensional Stakeholder Model) and environmental disclosure in Malaysian oil palm companies and non-oil palm companies.

The model is tested with environmental disclosure (ENVDi) shown as a function of stakeholder power (SP, CP, GP), strategic posture (SEC, ISO 14001, EC), economic performance (ROA) and the control variables (LOGSIZE, AGE).

Results of the hypotheses testing revealed that for oil palm PLCs, government power, social/environmental concern, ISO 14001 certification and environmental committee have statistically significant explanatory power in support of hypotheses H1c, H2a, H2b and H2c respectively, and for non-oil palm PLCs, shareholder power, creditor power, environmental committee and ROA have statistically significant explanatory power in support of hypotheses H1a, H1b, H2c and H3 respectively. The influencing factors of environmental disclosure for OP and NOP PLCs show some significant differences.

The next chapter will present the interview phase which also serves as a refinement to the survey instrument. It will explore environmental disclosure from the perspective of oil palm managers working in oil palm PLCs, oil palm non-PLCs and government agencies.

CHAPTER 5

DATA ANALYSIS AND RESULTS (SEMI-STRUCTURED INTERVIEWS)

5.1 INTRODUCTION

The interview phase of this study serves two purposes: 1) to assist in designing and refining the survey instrument (in the survey phase); and 2) as an exploratory study to solicit environmental information from oil palm non-PLCs and government agencies whose annual reports are not available to the public. The results from this phase of the research also seek to support or otherwise the findings identified in the annual report environmental disclosure (Chapter 4), as well as to gain insight from oil palm senior managers regarding '*the drivers of and impediments to environmental disclosure*' - Objective 3 of the study.

5.2 INTERVIEW DESIGN

This phase of the study uses face-to-face semi-structured interviews to provide real-world views from senior managers of oil palm organisations/companies regarding environmental information and disclosure. According to Saunders, Lewis, and Thornhill (2009, 321), semi-structured interviews will have a list of themes and questions to be covered and the order of questions may also be varied depending on the flow of the conversation. The nature of the questions and the ensuing discussion mean that the data will be recorded by audio-recording the conversation or perhaps note taking. As an exploratory study, it is a valuable means of finding out 'what is happening; to seek new insights; to ask questions and to assess phenomena in a new light' (Robson 2002, 55). Semi-structured interviews also provide greater scope for discussion and learning about the problem, opinions and views of the respondents (Saunders, Lewis, and Thornhill 2009, 320).

In this study, the questions are designed in such a way that they are both closed questions and open-ended or probing questions. In some cases the questions require the respondents to answer 'yes' or 'no' and followed by 'which ones, ''why' or 'how.' This way, the data collected can be analysed both quantitatively and qualitatively and allow for triangulation with other results from the study.

5.3 SAMPLE SELECTION

10 oil palm companies (5 PLCs and 5 non-PLCs) were identified for a face-to-face interview based on the 2010 Oil Palm Directory. Purposive sampling is used to select 10 organisations/companies that meet the following criteria: firstly, the organisation/company must operate palm oil mill(s); and secondly, their plantations must be in the state of Sabah, for the convenience of the researcher to conduct the interview. This sample represents 17% of the 60 oil palm organisations/companies that operate palm oil mills in Malaysia. There are a total of 123 palm oil mills in Sabah, Malaysia (Chong 2012b) with the large organisations/companies operating 5-10 mills each.

According to Saunders, Lewis, and Thornhill (2009, 237) purposive sampling enables the researcher to select cases that will best answer the research question and to meet the objectives of the research. Oil palm organisations/companies with mills are those responsible for the most damaging environmental impacts of the oil palm industry as a result of the release of palm oil mill effluent (POME) into the rivers. For non-probability sampling such as purposive sampling, there is no rule on sample size but rather, the purpose and focus of the research is important (Saunders, Lewis, and Thornhill 2009, 233). Moreover, the interview data is gathered to supplement the main data from the annual reports disclosure analysis. In this phase of the research, the views and opinions of the oil palm non-PLCs are sought regarding environmental disclosure. Oil palm non-PLCs are included in this study because of the pivotal role they play in the oil palm industry and because unlisted companies are vastly under-represented in prior research. By way of example, the largest player in the oil palm industry in Malaysia is the

Federal Land Development Agency (FELDA), a government agency, which comes under the direct purview of the Prime Minister's Department (Felda 2010). FELDA was established in 1956 under the Land Development Ordinance with the socio-economic mandate to develop forest land for the resettlement of the rural and landless poor (Teoh 2002). FELDA is Malaysia's largest plantation operator with 880,000 hectares of plantation land, with RM11.6 billion in revenue and a profit before tax of RM804 million in 2009 (Feldaholdings 2012). FELDA, the world's largest oil palm producer, accounts for 7% of the world oil palm production in 2011 (Feldaholdings 2012).

A letter of invitation to participate in the research (refer to APPENDIX 1A) explaining the aim of the study was first mailed to the ten (organisations/companies) in June 2011. The letter explained the objectives of the research and its significance. When no response was received, assistance from a government state agency was sought requesting them to solicit respondents from their personal contacts.

Out of 10 oil palm organisations/companies identified for a face-to-face interview, 7 participants agreed to be interviewed. All respondents were required to sign a letter of consent to participate in the research (refer to APPENDIX 1B).

5.3.1 Sample demographic

The organisational type and position of the interviewee are presented in Table 5.1 below. All participating organisations are in the oil palm business and are either PLCs, non-PLCs or government agencies. Government agencies comprise federal or state government organisations that operate large land areas for oil palm plantations including mills for processing crude palm oil (CPO) and normally establish companies to manage their oil palm business.

The non-PLCs are generally smaller oil palm operators, also undertaking processing such as recycling of palm oil fibres but they normally do not have mills for processing crude palm oil.

The oil palms PLCs are generally larger public companies and a few are multinational conglomerates, listed in the Bursa Malaysia, operating large areas of palm oil with market capitalisation in the billions and employment of over 100,000 workers.

Table 5.1: Organisation type and interview participants

Participant	Organisation type	Position
1	Government agency	Senior Manager
2	Government agency	Secretary to the Board
3	Non-PLC	CEO
4	Non-PLC	CEO
5	Non-PLC	General Manager
6	PLC	Research Manager
7	PLC	Research Manager

5.3.2 Interview process

The interview process lasted approximately 45 minutes to an hour (refer to APPENDIX 1C for the interview protocol). The data collected were transcribed on the same day or the following day to capture significant cues while they were still fresh in the researcher's memory. Interviewees all declined to be recorded so detailed notes were taken of the interview. To ensure authenticity of the interviews through the notes taking process and to ensure the accuracy of the data collected, the transcribed notes were sent to the respondents for their vetting and finalisation

and they were all required to sign the 'FEEDBACK OF INTERVIEW NOTES AND TRANSCRIPTION' form (refer to APPENDIX 1D).

5.4 DATA ANALYSIS

The data collected and the results of the findings are presented in the discussion below. The interview data are ordered following the themes in Ullmann's stakeholder model. This study uses the deductive approach to qualitative analysis where the use of existing theory was used to formulate the research question and objectives. The deductive approach involves the testing of a theoretical proposition by the employment of a research strategy specifically designed for the purpose of its testing (Saunders, Lewis, and Thornhill 2009, 489). To accommodate this approach, all participants were asked the same interview questions relating to the variables to be validated. In this style of interviewing, all participant interviews are considered equivalent, and the information gathered is compared and analysed item by item Morse (2005).

The questions formulated for the interview process and the data categories to analyse the data are derived from theory based on Ullmann's three-dimensional stakeholder model which is used in this study to examine the association of stakeholder power, strategic posture and economic performance to environmental disclosure.

In analysing the interview data, the following steps were taken:

Firstly, long notes were summarised, taking only the key points that emerged from the interview. Summarising involves compressing long statements into shorter statements, taking only the key points of what has been said (Saunders, Lewis, and Thornhill 2009, 491), i.e. condensing the meaning of large amounts of text into fewer words.

Secondly, 'bits' or 'chunks' of the data were attach to a category – also called unitising the data (Saunders, Lewis, and Thornhill 2009, 493). In this interview phase, the statements under the 'measures/narratives' columns of the tables where the data are presented have undergone the unitising process and are in a category of similar themes/meanings.

Thirdly, the data are displayed in a table (created using Microsoft Excel) depicting responses from the interview respondents. Each table comprises the broad category of data derived from Ullmann's stakeholder model and other broad category of environmental information solicited from the interview respondents.

In carrying out the interview, it is to be noted that the interviewees were not given any documents such as a stakeholder list to aid them in the discussion. Rather, all responses given are based on their own understanding and experience in the disclosure related topics. The stakeholders defined in this study are tabulated in Table 5.2 below and the interviewees' responses are checked against the list. This is more insightful as this will show the respondents level of understanding of the stakeholder concept.

A summary of the questions and responses are presented below.

5.4.1 Important stakeholders

Q1: Who do you consider to be the most important stakeholders in your organisation/company?

Based on the feedback from respondents, the most important stakeholders are *customers/buyers* followed by *Ministry of Plantation and Commodities/government department* and *senior management*

Stakeholder identified by the respondents generally coincided with those most consistently mentioned in the literature and appear in rows 1 to 10 in Table 5.2

below (Freeman 1984; Clarkson 1995; Mitchell, Agle, and Wood 1997; Fassin 2009; Freeman 2010). Additional stakeholders (rows 11 and 12), includes the East Malaysian Palm Oil Society which is particular to the oil palm industry. The two PLCs (Respondents 7 and 8) identified the highest number of important stakeholders.

Table 5.2: Important stakeholders

Category	Measures/narrative	Respondents							
		1	**2**	**3**	**4**	**5**	**6**	**7**	
Important stakeholders		Govt agency	Govt agency	Non PLC	Non PLC	Non PLC	PLC	PLC	% response
	1. Shareholders/owners				✓		✓	✓	43
	2. Creditors/financiers				✓		✓		29
	3. Customers/buyers	✓		✓	✓		✓	✓	71
	4. Suppliers		✓	✓	✓				43
	5. Ministry of P&C/govt dept	✓	✓				✓	✓	57
	6. Lobby groups/NGOs						✓	✓	29
	7. Media						✓	✓	29
	8. Employees		✓	✓	✓				43
	9. Senior management			✓	✓		✓	✓	57
	10. Board of Directors				✓		✓	✓	43
	11.Local community/school/society	✓	✓			✓			43
	12. East Malaysia Palm Oil Association	✓							14

5.4.2 Stakeholder influence

Q2: Do the stakeholders above influence your decision to disclose or not disclose environmental information? (if Yes, why?)

In response to Question 2 (refer to Table 5.3 below), most of the respondents (Respondents 1 to 5) reported that their important stakeholders do not influence their organisation's/company's decision to disclose environmental information because *we make our own decision.* Only the PLCs (Respondents 6 and 7) reported that their important stakeholders influence their organisation's/company's decision to disclose environmental information because *our stakeholders need to know that we are committed to safeguard the environment"* and that "*as a public-listed company, we need to uphold our corporate image in the interest of our stakeholders*

Table 5.3: Stakeholder influence on disclosure

Category	Measures/narratives	Respondents							
		1	**2**	**3**	**4**	**5**	**6**	**7**	
Stakeholder power		Govt agency	Govt agency	Non PLC	Non PLC	Non PLC	PLC	PLC	% response
	Yes						✓	✓	29
	No	✓	✓	✓	✓	✓			71
	1. We make our own decision.	✓	✓	✓	✓	✓			71
	2. Our stakeholders need to know that we are committed to safeguard the environment.						✓		14
	3. As a public listed company, we need to uphold our corporate image in the interest of our stakeholders.							✓	14

5.4.3 Strategic posture

Q3: Do you continually monitor what these stakeholders are thinking about your organisation's/company's environmental responsibility? How?

In response to Question 3 (refer to Table 5.4 below), all respondents noted that they continually monitor what the stakeholders are thinking about their organisation's/company's environmental responsibility. They do this by *adhering to standards imposed by the authorities and implementing good agricultural practices* (86%) and *implementation of environmental protection programmes and activities* (86%). Palm oil is a highly regulated industry and many laws are in place to protect the environment and wildlife such as the Environmental Quality Act 1974, Environmental Impact Assessment 1987, Pesticides Act 1974, Protection of Wildlife Act 1972 (Basiron 2009) and so on. On the other hand, environmental protection programmes would include zero burning, integrated pest management, water management, waste management, riparian reserves, and so on. It is adhering to the existing environmental protection laws and implementing environmental protection programmes that oil palm companies/organisations are deem to be continuously monitoring their stakeholders' interests and concerns.

Table 5.4: Monitoring stakeholders' perceptions of their organisation's/company's environmental responsibility

Category	Measures/narratives		Respondents					
		1	**2**	**3**	**4**	**5**	**6**	**7**	
Strategic posture		Govt agency	Govt agency	Non PLC	Non PLC	Non PLC	PLC	PLC	% response
	Yes	✓	✓	✓	✓	✓	✓	✓	100
	No								
	1. Keeping alert on the latest trends and new developments.	✓							14
	2. Adhere to standard imposed by the authorities and implement good agricultural practices.	✓	✓		✓	✓	✓	✓	86
	3. Implementation of environmental protection programmes and activities.	✓	✓		✓	✓	✓	✓	86
	4. Working closely with stakeholders.			✓	✓				29

5.4.4 Economic performance

Q4: Do you think that very profitable oil palm organisations/companies would be more likely to disclose environmental information? Why?

In response to Question 4 (refer to Table 5.5 below), all respondents believe that profitable organisations/companies are more likely to disclose environmental information. The two reasons given are *positive implications of disclosure - better image (good corporate citizens), better profit (financial stability) and better future (sustainability of their operations)* and *profitable companies are in a position to spend money on the environment.*

Table 5.5: Profitability and environmental disclosure

Category	Measures/narratives	Respondents							
		1	2	3	4	5	6	7	
Economic performance		Govt agency	Govt agency	Non PLC	Non PLC	Non PLC	PLC	PLC	% response
	Yes No	✓	✓	✓	✓	✓	✓	✓	100
	1. Profitable companies are more likely to disclose because of the positive implications of disclosure - better image (good corporate citizens), better profit (financial stability) and better future (sustainability of their operations).	✓		✓	✓	✓	✓	✓	86
	2. Profitable companies are in a position to spend money on the environment.	✓	✓		✓		✓	✓	71

5.4.5 Biodiversity/environmental/wildlife protection programmes

Q5: Does your organisation/company undertake biodiversity/environmental/wildlife protection programmes? Yes/No (please explain)

In response to Question 5, all 7 respondents (100%) reported that their organisation/company undertakes biodiversity/environmental/wildlife protection programmes. They were then asked which environmental measures they undertook and their responses were grouped in Table 5.6 below.

Table 5.6: Biodiversity/environmental/wildlife protection programmes

Category	Measures/narratives	Respondents							
		1	2	3	4	5	6	7	
Biodiversity/ environmental/ wildlife protection programmes		Govt agency	Govt agency	Non PLC	Non PLC	Non PLC	PLC	PLC	% response
	Yes	✓	✓	✓	✓	✓	✓	✓	100
	No								
	1. Recycling of oil palm fibres to displace inorganic fertilisers and waste management (EN14)	✓	✓	✓		✓			57
	2. Conversion of EFB for energy (EN18)	✓							14
	3. Flora/fauna (including wildlife corridor) conservation, preservation and protection (EN13)	✓			✓		✓	✓	57
	4. Zero burning (EN14)		✓			✓			29
	5. Planting beneficial plants/cover crops - minimise erosion (EN14)		✓			✓	✓	✓	57
	6. Minimise use of chemical weed control (EN14)		✓						14
	7. Biogas power plant to displace use of fossil fuel - reduce carbon imprint (EN6 & EN18)	✓							14
	8. Stability of altered forest ecosystem (SAFE) programme (EN14)							✓	14

Notes:

Environmental Indicators from Global Reporting Initiatives (GRI) version 3.1 (G3.1)

EN6 - Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy based in energy requirements as a result of these initiatives.

EN13 - Habitats protected or restored.

EN14 - Current actions, and future plans for managing impacts on biodiversity.

EN18 - Initiatives to reduce greenhouse gas emissions and reductions achieved.

The three most common environmental initiatives were *recycling of EFB (empty fruit bunches) to displace inorganic fertilisers and waste management, flora/fauna (including wildlife corridor) conservation, preservation and protection* and *planting beneficial plants/cover crops - minimise erosion*. Respondents 1 and 2, both government agencies reported more initiatives than either PLCs or non-PLCs.

5.4.6 Environmental disclosure in annual reports

Q6: Does your organisation/company disclose biodiversity/environmental/wildlife protection programmes/activities in its annual report? (if Yes, which ones?)

In response to Question 6 (refer to Table 5.7 below), 71% of the respondents disclose environmental information in their annual reports. They also claim to disclose all environmental information related to their

biodiversity/environmental/wildlife protection programmes in their annual reports.

Table 5.7: Environmental disclosure in annual reports

Category	Measures/ narratives	Respondents							
		1	**2**	**3**	**4**	**5**	**6**	**7**	
Environmental disclosure in annual reports		Govt agency	Govt agency	Non PLC	Non PLC	Non PLC	PLC	PLC	% response
	Yes	✓			✓	✓	✓	✓	71
	No		✓	✓					29
	All	✓			✓	✓	✓	✓	71
	None		✓	✓					29

5.4.7 Mandatory disclosure

Q7: Do you think that mandatory, transparent and audited environmental public disclosure would be good for the oil palm business? Why or why not?

In response to Question 7 (refer to Table 5.8), most of the respondents (Respondents 3, 4, 5, 6 and 7) believe that *companies should be transparent in their environmental activities in order to be seen as good corporate citizens.* They believe that *some companies function better with rules and regulations and mandatory disclosure may be useful.*

Interestingly, only the government organisations/agencies (Respondents 1 and 2) reported that mandatory, transparent and audited environmental disclosure is not necessary. They believe that *Companies should be self-driven. Companies should develop a culture of sustainability in their operations and investing in environmentally friendly technology. The government has a role in disclosure but they should not stifle the industry*. Moreover, *the various laws, regulations and guidelines are already in place to ensure that the environment is protected.*

Table 5.8: Mandatory, transparent and audited environmental disclosure

Category	Measures/narratives	Respondents							
		1	2	3	4	5	6	7	
Mandatory disclosure		Govt agency	Govt agency	Non PLC	Non PLC	Non PLC	PLC	PLC	% response
	Yes			✓	✓	✓	✓	✓	71
	No	✓	✓						29
	1. In the long run, companies should be self-driven. Companies should develop a culture of sustainability in their operations and investing in environmentally friendly technology. The government has a role in disclosure but they should not stifle the industry.	✓							14
	2. It is not a question of "compelling". The various laws, regulations and guidelines are already in place to ensure that the environment is protected. Whether or not the organisation company discloses their environmental activities is a matter of company policy.		✓						14
	3. Companies should be transparent in their environmental activities in order to be seen as good corporate citizens. Some companies function better with rules and regulations and mandatory disclosure therefore may be useful.			✓	✓	✓	✓	✓	71

5.4.8 Disclosure of negative environmental information

Q8: Do you believe that oil palm organisations/companies should disclose information which can prove detrimental to their profitability or reputation? Yes/No (give reasons)

In response to Question 8 (refer to Table 5.9 below), 57% of the respondents (Respondents 1, 3, 4 and 6) reported that organisations/companies should disclose information even if the information affects their profitability or reputation.

Those reporting that organisations/companies should not disclose negative information that can affect their profitability or reputation were mainly concerned that it would damage the reputation of their business.

Table 5.9: Disclosure of negative environmental information

Category	Measures/narratives	Respondents							
		1	2	3	4	5	6	7	
Negative environmental information		Govt agency	Govt agency	Non PLC	Non PLC	Non PLC	PLC	PLC	% response
	Yes	✓		✓	✓		✓		57
	No		✓			✓		✓	43
	1. Companies should disclose environmental information; they should be transparent and committed for the benefit of shareholders.	✓		✓	✓		✓		57
	2. Damaging environmental information should not be disclosed because it will affect the profitability and reputation of the company.		✓			✓		✓	43

5.4.9 Improving environmental disclosure and transparency

Q9: In order to improve environmental disclosure and transparency, what are the three most important types of information oil palm organisations/companies should disclose in their annual reports?

In response to Question 9 (refer to Table 5.10), a majority of respondents (Respondents 1, 2, 6 and 7) reported that *environmental programmes (e.g. wildlife protection/policies)* should be disclosed in annual reports. This response came from the 2 government agencies and 2 PLCs.

Table 5.10: Important environmental information disclosures

Category	Measures/narratives	Respondents							
		1	2	3	4	5	6	7	
Important environmental information		Govt agency	Govt agency	Non PLC	Non PLC	Non PLC	PLC	PLC	% response
	1. Environmental programmes (e.g. wildlife protection/policies.	✓	✓				✓	✓	57
	2. Good agricultural/manufacturing practices in line with RSPO or ISCC principles.	✓				✓			29
	3. Environmental programme budget.	✓							14
	4. Collaborative projects with NGOs.	✓		✓					29
	5. Contribution/donation towards environmental conservation/protection.		✓	✓					29
	6. Treatment of contaminable effluent such as pome.				✓				14
	7. Possession of certification that meets buyer's expectations, e.g. RSPO					✓			14
	8. Water conservation.						✓	✓	29
	9. Replanting/reforestation programme.						✓	✓	29

5.4.10 Disclosure methods

Q10: Besides the annual report, where else does your organisation/company disclose biodiversity/environmental/wildlife protection programmes/activities?

In response to Question 10 (refer to Table 5.11 below), the most popular disclosure method is via *pamphlets/catalogues/brochures* (Respondents 1, 3, 4, 5 6 and 7) and *webpage* (Respondents 1, 3, 4, 5 6 and 7). The other popular disclosure method is via *news sheets/media release* (Respondents 1, 4, 6 and 7).

Table 5.11: Disclosure methods

Category	Measures/narratives	Respondents							
		1	2	3	4	5	6	7	
Disclosure methods		Govt agency	Govt agency	Non PLC	Non PLC	Non PLC	PLC	PLC	% response
	1. Pamphlets/catalogues/brochures	✓		✓	✓	✓	✓	✓	86
	2. News sheets/media release	✓			✓		✓	✓	71
	3. Webpage	✓		✓	✓	✓	✓	✓	86
	4. Quarterly group report					✓			14

5.4.11 Drivers of and impediments to environmental disclosure

Q11: In your opinion, what are the drivers of and impediments to environmental disclosure in oil palm organisations/companies annual reports?

This question refers to Objective 3 of the study, which is *'To determine the drivers of and impediments to environmental disclosure from the perspective of oil palm company managers.'*

5.4.11.1 Drivers of environmental disclosure

In response to Question 11 (refer to Table 5.12 below), most of the respondents reported that drivers or motivations of environmental disclosure is *complying with societal norms* (Respondents 1, 6 and 7) and *reward for good feedback* (Respondents 1, 2 and 4).

5.4.11.2 Impediments to environmental disclosure

In response to Question 11 (refer to Table 5.12), most of the respondents (Respondent 1, 2, 3 and 4) reported that the main impediment to environmental disclosure is *lack of funds and resources.* This response came from the 2 government agencies and the non-PLCs. The 2 PLCs (Respondents 6 and 7) reported *lack of co-operation from the community/people* in the implementation of environmental initiatives, such as the planting of beneficial cover crops, and so on. It is quite safe to assume that these 2 PLCs depend on oil palm smallholders in their operations.

Table 5.12: Drivers of and impediments to environmental disclosure

Category	Measures/narratives	Respondents							
		1	2	3	4	5	6	7	
		Govt agency	Govt agency	Non PLC	Non PLC	Non PLC	PLC	PLC	% response
Drivers	1. Reward for good feedback (improved profitability)	✓	✓		✓				43
	2. Complying with societal norms.	✓					✓	✓	43
	3. Faciliate environmental consciousness/awareness.	✓							14
	4. Concern for the environment						✓	✓	29
Impediments	1. Lack of funds and resources.	✓	✓	✓	✓				57
	2. Lack of awareness/knowledge.	✓				✓			29
	3. Lack of cooperation from community/people.						✓	✓	29

5.5 DISCUSSION

5.5.1 Environmental disclosure model

The environmental disclosure model of the study is based on Ullmann's stakeholder model comprising the dimensions of stakeholder power, strategic posture and economic performance.

5.5.1.1 Stakeholder power

Based on the reports of 7 interview respondents, the most important stakeholders are *customers/buyers* (71%), *Ministry of Plantation and Commodities/government departments* (57%) and *senior management* (57%). However, 71% of the respondents reported that their important stakeholders do not influence environmental disclosure of their respective organisations/companies. Only the PLCs (Respondents 6 and 7) reported that their important stakeholders do influence environmental disclosure.

In the annual reports disclosure phase of the study, the 3 stakeholders investigated for their influence on disclosure were shareholders, creditors and government. For oil palm PLCs, only government (in terms of government ownership) was a significant predictor of environmental disclosure, which broadly fits with the opinions expressed by oil palm managers that stakeholders have limited influence over disclosure.

5.5.1.2 Strategic posture

All the respondents reported that they continually monitor what the stakeholders are thinking about their organisation/company's environmental responsibility by *adhering to standards imposed by the authorities and implementing good agricultural practices* and *implementation of environmental protection*

programmes and activities. This is the qualitative measure of strategic posture. In the annual reports disclosure phase of the study, this dimension is measured using 3 proxy variables - social/environmental concern, ISO 14001 certification and environmental committee which were all significant predictors of environmental disclosure and aligns with the interview results.

5.5.1.3 Economic performance

All respondents agree that profitable organisations/companies are more likely to disclose environmental information. The two reasons given are *positive implications of disclosure - better image (good corporate citizens), better profit (financial stability) and better future (sustainability of their operations)* and *profitable companies are in a position to spend money on the environment.*

This result is at odds with the findings in the annual reports disclosure phase where the ROA for oil palm PLCs is not significantly associated with environmental disclosure. The results of the annual reports disclosure analysis phase of this study, however, is consistent with prior Malaysian studies by Ghazali (2007) and Amran and Devi (2007) which revealed that the government plays a significant role in voluntary disclosure as companies that are dependent on the government or with significant government shareholding are institutionalised by the government's aspirations and vision regarding the social and environmental issue. The government will undertake environmental activities and reporting their activities regardless of their profitability because of their social or environmental agenda.

5.5.2 Drivers of and impediments to environmental disclosure

Objective 3 of this research, "to determine the drivers of and impediments to environmental disclosure from the perspective of oil palm company managers," was directly addressed in the interview. Respondents reported that the most

important drivers of environmental disclosure are *complying with societal norms* and *reward for good feedback.* The main impediment to environmental disclosure is *lack of funds and resources.* This is consistent with findings from prior studies (He and Chen 2009; Ghazali 2009) carried out in developing countries, China and Malaysia respectively.

5.6 REFINEMENT OF SURVEY INSTRUMENT

This phase of the research is also used to assist in designing and refining the survey instrument (questionnaire survey) in the survey phase of this study. It is important that the respondents have a clear understanding of the questions to enable assessment of the questions' validity and the likely reliability of the data that will be collected (Saunders, Lewis, and Thornhill 2009, 394).

In Malaysia, it is widely recognised that senior executives are competent at communicating in English and the questionnaire is prepared in this language. A number of questionnaire surveys conducted in prior Malaysian studies (Ramasamy and Hung 2004; Haniffa and Cooke 2005; Ghazali 2009) were also conducted in English.

A copy of the questionnaire was given to the interview respondents for their comments and suggestions, after the semi-structured interviews have been completed, for review. As the respondents did not offer any suggestion(s) for improvement nor the use of dual language (English and Bahasa Melayu), the questionnaires were delivered without amendment.

Table 5.13 below summarises the interviewees' feedback. Six (6) structured questions are prepared for the respondents' feedback.

Table 5.13: Interviewees feedback on survey instrument

Questions	Narratives	Respondents							
		1	2	3	4	5	6	7	
		Govt agency	Govt agency	Non PLC	Non PLC	Non PLC	PLC	PLC	% response
Q1: Is the instruction clear?	Yes	✓	✓	✓	✓	✓	✓	✓	100
	No (suggestions)								
Q2: Is the layout clear and attractive?	Yes	✓	✓	✓	✓	✓	✓	✓	100
	No (suggestions)								
Q3: Which, if any, of the question is unclear?	All questions are clear	✓	✓	✓	✓	✓	✓	✓	100
	Question no.____ is/are not clear.								
Q4: Which, if any, question you felt uneasy to answer?	All questions are good.	✓	✓	✓	✓	✓	✓	✓	100
	I felt uneasy answering Question no. ___								
Q5: Is there any topic that was omitted?	All topics related to environmental disclosure is covered.	✓	✓	✓	✓	✓	✓	✓	100
	Suggested topics for inclusion								
Q6: Should the questionnaire be translated into Bahasa Melayu (dual language)?	Yes								
	No	✓	✓	✓	✓	✓	✓	✓	100
	1. The questions are easy to understand.	✓	✓	✓	✓	✓	✓	✓	100
	2. The questionnaire is already long.	✓	✓				✓	✓	57

5.7 SUMMARY

This chapter discussed the interview phase of the study based on the response from 7 interview respondents from oil palm organisations comprising government agencies, non-oil palm PLCs and oil palm PLCs.

This phase of the study serves two purposes. Firstly, as an exploratory study to solicit environmental information from oil palm non-PLCs and government agencies whose annual reports are not available to the public. Secondly, as a study, to assist in designing and refining the survey instrument, for use in the survey phase of the study.

Based on Ullmann's stakeholder model, for the dimension of stakeholder power, *customers/buyers* were rated as the most important stakeholder by the interview respondents. The interview results also suggest that government (the *Ministry of Plantation and Commodities/government department*) and senior management are important stakeholder groups.

For the dimension of strategic posture, the majority of the interview respondents *adhere to standards imposed by the authorities and implementing good agricultural practices* and *implement environmental protection programmes and activities.*

For the dimension of economic performance, all the interview respondents believe that profitable organisations/companies are more likely to disclose environmental information.

The main drivers to environmental disclosure as reported by the interview respondents are *complying with societal norms* and they believe there is *reward for good feedback (improved profitability)*. The main impediment to environmental disclosure is *lack of funds and resources*.

The next chapter will discuss the survey phase of the study. The questionnaire survey will be used to supplement the primary data source of annual reports.

CHAPTER 6

DATA ANALYSIS AND RESULTS (QUESTIONNAIRE SURVEY)

6.1 INTRODUCTION

This chapter describes the survey phase of the study. The main objective of this phase is to explore oil palm managers' perceptions of '*the drivers of and impediments to environmental disclosure*' (Objective 3). The exploratory data analysis from the survey also supplements the primary data analysis based on annual report disclosures in order to answer the research question '*Does company stakeholder power, strategic posture and economic performance influence environmental disclosure of oil palm companies in Malaysia?.'*

Previous surveys exploring drivers of and impediments to voluntary disclosure included ACCA (2004) and Ghazali (2009). In a study conducted by ACCA in 2004, the response from questionnaire surveys sent to 1077 Chairman, Managing Directors, Chief Executive Officers and General Managers of companies listed in the Bursa Malaysia and non-public listed companies (8% response received) revealed drivers pushing towards social and environmental reporting to include demands for greater disclosure and accountability, meeting customer interest and demand, relationship management with suppliers and government encouragement (ACCA 2004). In Ghazali (2009), 70 questionnaires sent to chief financial officers and 68 sent to investment analysts of companies listed in the Bursa Malaysia in 2006/2007 revealed that the most cited reason for companies not to provide voluntary disclosure is their fear of releasing too much information to their competitors.

6.2 QUESTIONNAIRE DESIGN

Questionnaires may take a number of forms including self-administered questionnaires, internet-mediated questionnaires and telephone questionnaire (Saunders, Lewis, and Thornhill 2009, 362). This study uses the postal or mail questionnaire where the respondents are provided with a stamped self-reply envelope to return the completed questionnaire. The main consideration for using this method is to ensure that the questionnaire can reach respondents who have limited access to the internet. This is often the case when oil palm estates are in rural and hard-to-access areas. According to Saunders, Lewis, and Thornhill (2009, 364) a drawback of this approach is that it has low response rates and low confidence that the right person has responded.

The questionnaire is attached in APPENDIX 2B.

6.2.1 Format of questionnaire

The questionnaire used in the study is 17 pages in total which includes an introductory page explaining the objective of the study and the confidentiality of companies and respondents to the questionnaire. This questionnaire uses A4 size paper, 12 size font for ease of reading and printed on both sides to avoid bulkiness.

There are 27 questions comprising 26 closed questions and 1 open question. Q5, 6, 7, 8 and 9 are adopted from Ramasamy and Hung (2004) and Q1, Q14, Q15 and Q17 are adopted from Haniffa and Cooke (2005) and the remaining questions are developed specifically for this study.

6.2.2 Order and flow of questions

The order and flow of the questions should be logical to the respondent (Saunders, Lewis, and Thornhill 2009, 387). The questions in this questionnaire is organised and grouped according to the main themes of the study:-

Section One – stakeholders
Section Two – strategic posture
Section Three – environmental activities
Section Four – environmental disclosure
Section Five – demographic data

6.3 SAMPLE SELECTION

There are 240 oil palm companies listed in the 2010 Oil Palm Directory, with 36 oil palm PLCs and the remainder non-PLCs. From the 240, only those that operated palm oil mills are selected for reasons outlined below, resulting in a final sample of 60 oil palm companies.

The final sample therefore comprises 36 oil palm PLCs and 24 non-PLCs. The oil palm non-PLCs include government agencies and private companies. These are organisations operating oil palm mills for processing crude palm oil. According to (Chong 2012b, 2012a) they release palm oil mill effluent (POME) into the environment via rivers endangering the lives of animals that live in the river and depriving the local inhabitants of clean water for drinking, cooking, bathing, gardening, irrigation and livestock.

Companies that are excluded from the sample selection are oil palm smallholders who own oil palm estates of less than 50 ha and who sell their oil palm fruit to government agencies or large oil palm companies. They do not own palm oil mills

and are not involved in any sort of processing. The environmental impact of their operation is therefore minimal relative to group selected.

The target respondents are senior managers which includes financial managers. These are the key people in the company because they are well versed and knowledgeable in the company's operations. These are personnel who should have been with the company for at least 10 years, having authority in management matters and able to exert influence on the company's objectives.

6.4 DATA COLLECTION

6.4.1 Refining the questionnaire

Questionnaire refinement was undertaken during the interview process. Since the interview respondents did not offer any suggestions to improve the design nor refine the questions, the questionnaires were distributed without further amendment. The language used is English. The use of dual language was considered but two main considerations weighed against that option:-

1. Extra space is required to fit in the Bahasa Melayu translation for each question which will further increase the length of the questionnaire.

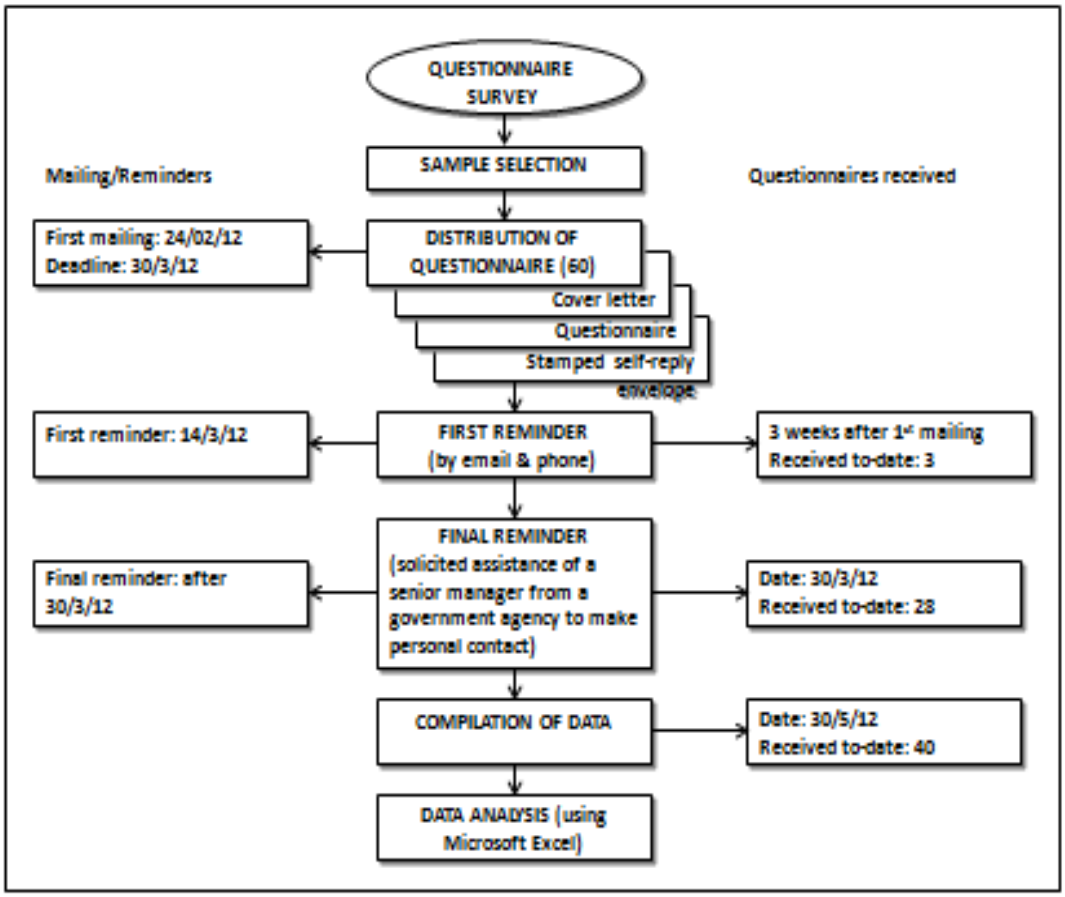
2. During the interviews, the respondents commented that the questions in the questionnaire were easy to understand.

Previous questionnaire surveys conducted in Malaysian (Ramasamy and Hung 2004; Haniffa and Cooke 2005; Ghazali 2009) were similarly conducted in English.

6.4.2 Administering the questionnaire

Figure 1 below shows the administrative process undertaken in the survey phase.

Figure 6: Administering the questionnaire



6.4.2.1 Covering letter

The questionnaire in this study is accompanied by a covering letter (see APPENDIX 2A) which explains the purpose of the survey. The message in the covering letter will affect the response rate (Dillman 2007). For this study, the covering letter explains the purpose of the research and why the study is useful. The covering letter also explains how the survey should take less than 20 minutes to complete and that individual companies and participants in this survey will remain confidential and will not be identified in the study.

The participants to the survey are also informed that they would be given a copy of the major findings of the study.

6.4.2.2 Mailing of questionnaires

60 questionnaires were mailed to companies' Financial Manager on 24th February 2012. Each survey sent out consists of a covering letter, a questionnaire and a stamped self-reply envelope.

6.4.2.3 Reminders

The deadline for returning the questionnaire as indicated on the cover letter is 30 March 2012. However, only 3 completed questionnaires were received 3 weeks after the first mailing.

Reminders to those companies with email contacts were sent on 14 March 2012 and reminders by letters were also sent to those without email contacts either by airmail or fax. After this reminder, most respondents communicated through emails, asking to be sent another questionnaire. By end of March 2012, a total of 28 completed questionnaires were received.

For questionnaires resent through email, the respondents were given a choice to print out the questionnaire, complete it and return it to the mailing address indicated. However, respondents were also given the opportunity to answer on the softcopy and return their responses via email.

For the final reminder, the researcher solicited the assistance of a senior manager from a state agency to make personal contacts with oil palm companies and this is the reason that the deadline for submitting the questionnaire was extended to the end of May 2012. By the end of May 2012, a total of 40 questionnaires were received. This study has checked for non-response bias and no significant differences were detected in the responses of the late returners.

6.5 DATA ANALYSIS

Out of 60 questionnaires sent out, the study yielded a response rate of 67% or 40 returned questionnaires. The data collected and the results of the findings are presented in the following discussion.

6.5.1 Demographic data

Referring to Table 6.1 below, the demographic data shows that most of the respondents are male (68%), in their 40s (45%), holding the position of senior managers (38%), who have been in their organisation/companies for more than ten years (82%) and more than 5 years in their current position (65%).

Most of the sample organisations/companies have less than 1,000 employees (55%), revenue less than RM49 million (37%) and plantation size in the 10,000-99,999 ha range (47%). The participating organisations/companies comprise 65% non-PLC (including government agencies) and 35% PLC. The non-respondents were mostly oil palm PLCs. This is consistent with the findings in Ghazali (2009) that examine voluntary disclosure in Malaysian corporate annual reports. 70 questionnaires sent to CFOs and 68 to investment analysts yielded a response rate of only 24.6%.

Table 6.1: Demographic data

	Percentage of respondents						
Sex	Male	Female					Total
	68	32					100
Age (Yrs)	<30	30-39	40-49	50-59	60 +		
	3	13	45	27	12		100
Position	Member BOD	EC/CEO	Sr Manager	CFC/FM	Sr executive	Executive	
	0	8	38	10	22	22	100
Length service (X)	<1 year	1<X<3	3<X<5	>5 years			
- current org (yrs)	5	3	10	82			100
Length service (Y)	<1 year	1<Y<3	3<Y<5	>5 years			
-current position (yrs)	5	12	18	65			100
Size (no. employees)	>10,000	5,000-9,999	1000-4,999	<1,000			
	13	5	27	55			100
Size (revenue)	>RM1 bil	500-999	100-499	50-99	10 to 49	<10	
- RM mil	8	5	18	12	37	20	100
Plantation size	>1 mil	500,000-999,999	100,000-499,999	10,000-99,999	<10,000		
- ha	0	0	8	47	45		100
Category	non-PLC	PLC					
	65	35					100

6.5.2 Environmental disclosure model

According to Ullmann (1985), social disclosure is a function of stakeholder power, strategic posture and economic performance on corporate voluntary disclosure. The environmental disclosure model used in the study is based on Ullmann (1985) stakeholder model.

6.5.2.1 Stakeholder power

As discussed in detail in Chapter 4, stakeholder power, the first dimension of Ullmann (1985) stakeholder model, concerns the stakeholders influence on corporate management. The power of the stakeholder can be construed as the stakeholder having control over resources required by the company. In this respect therefore, companies will address the demands of powerful stakeholders (Roberts 1992). Stakeholder power is expected to be correlated with voluntary disclosure.

Question 1 to 3 pertains to stakeholder's importance or influence in oil palm organisations/companies.

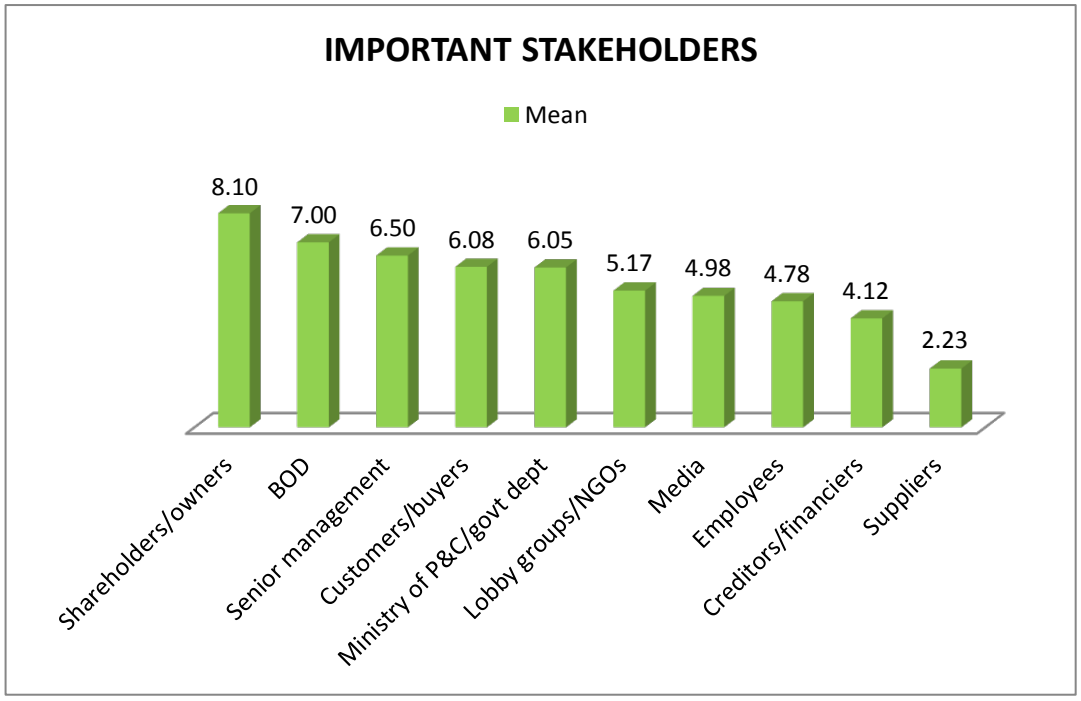
The top three (3) stakeholders identified by respondents as having *high* or *very high* influence on the type of information disclosed in annual reports are the *Board of Directors* (85%), *senior management* (75%) and *shareholders/owners* (70%).

Stakeholders with *little* or *no influence* include *Ministry of Plantation & Commodities/government departments* (40%), *suppliers* (3%) and *creditors/financiers* (30%).

In general terms, the 3 most important stakeholders are *shareholders/owners*, the *Board of Directors* and *senior management*. This is calculated by taking the average ranking of each of 10 stakeholders nominated in the survey (refer to Chart 6.1 below).

The least important stakeholders are *creditors/financiers* and *suppliers*.

Chart 6.1: Important stakeholders



Only 5 respondents offered suggestions for *other important stakeholders*. The few mentioned are *local people*, *politicians* (Chief Minister and Minister of Environment & Tourism), *community heads*, *Department of Environment* and the *World Wildlife Fund* (WWF).

In summary, the most important and influential stakeholders for the survey phase are *Board of Directors, senior management, shareholders/owners.* In the annual reports disclosure phase, the only significant stakeholder identified is *government* and in the interview phase, *customers/buyers* are reported as the most important stakeholder, followed by the *Ministry of Plantation & Commodities, senior management, Board of Directors* and *shareholders/owners*. Based on the results of all 3 phases of the study, the only consistently important stakeholder impacting on disclosure is *shareholders/owners*, which includes *government* ownership in oil palm PLCs and non-PLCs (including government agencies). The interview phase and survey phase of the study found 2 other important stakeholders – *Board of Directors* and *senior management* – which were not examined in the annual reports disclosure phase.

6.5.2.2 Strategic posture

Strategic posture, the second dimension of Ullmann's (1985) stakeholder model concerns companies' respond to social demands. In an active strategic posture position, managers are constantly monitoring their status with key stakeholders and devising ways to shape stakeholder impressions through their corporate responsibilities activities. A study by Roberts (1992) found companies displaying active strategic posture are expected to disclose more environmental information regarding their environmental responsibility activities.

In this study, among the proxies included as indicators of the nature of a company's strategic posture toward environmental issues are *social/environmental concerns* in the vision/mission statement or Chairman's statement, possession of *ISO 14001/RSPO certification* and the existence or absence of *environmental committees* established to deal with stakeholder concerns and to deal with the company's environmental issues.

Questions 4 to 14 pertain to strategic posture which are ways organisations/companies respond to environmental demands of their stakeholders.

A majority (86%) of the respondents are either *concerned or very concerned*, 12% are *somewhat concerned*, 2% have *little concerned* and none is *not at all* concerned, about the effects of operations on the environment.

Further, 82.5% of the respondents report that *environmental concern* is specified in the company's objectives; 87.5% have *personnel/ department/committee* with a dedicated environmental responsibility; 77.5% reported having a formal environmental review or evaluation; and 40% of the sample organisations engage in environmental disclosure.

Despite these relatively high levels of environmental concern, only 28% of the respondents contribute to environmental protection *very often* or *all the time*, 45% *quite often*, 27% *seldom* and none *never*.

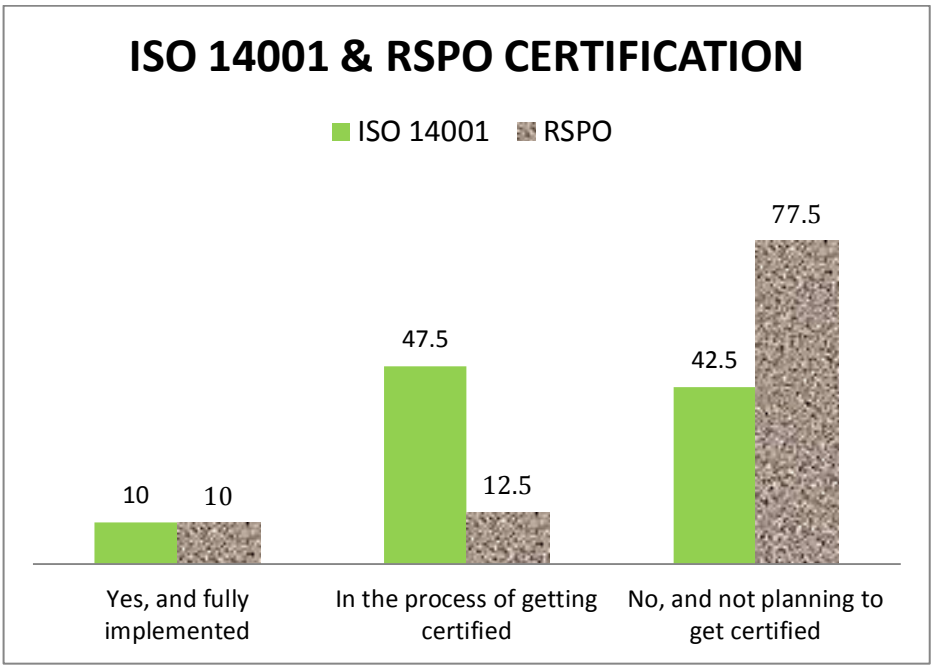
Furthermore, only 55% of the respondents have environmental protection embedded within company culture *very often* or *all the time*, 35% *quite often*, 8% *seldom* and 2% *never*.

Companies achieving independent certification of their processes imply an active posture for environmental compliance. ISO 14001 provides "confidence and evidence to external parties that corporations have control over significant aspects of their operations and activities …" (Yusoff, Yusoff, and Lehman 2007, 897).

Similarly, RSPO (Roundtable on Sustainable Palm Oil) certification is a seal of approval that palm oil products are produced without undue harm to the environment and conforms to standards set for the production process. The RSPO is a global, multi-stakeholder initiative on sustainable palm oil with the main objective to promote the growth and use of sustainable palm oil (RSPO 2010).

For this data (refer to Chart 6.2 below) only 10% of the respondents have *fully implemented* the ISO 14001, 47.5% are *in the process of getting certified* and 42.5% are *not planning to get certified*. For the RSPO certification, only 10% of the respondents have *fully implemented* the RSPO, 12.5% are *in the process of getting RSPO certified* and 77.5% are *not planning to get certified*.

Chart 6.2: ISO 14001/RSPO certification



In summary, a majority of the survey respondents express concern for the environment. Most having *environmental concern* specified in their organisation's/company's objectives and having a *committee or department* with a dedicated environmental responsibility. However, only 10% of the respondents reported possessing the *ISO 14001 or RSPO certification*. Significant minorities did not donate to environmental activities or have environmental responsibility embedded in their company culture. In the annual reports disclosure phase of the study, all 3 strategic posture variables (*social/environmental concern, ISO 14001 and environmental committee/department*) are significant in explaining environmental disclosure. The survey results suggest that while disclosure may be positively influenced by strategic posture, there is some doubt as to whether it actually results in a real commitment to environmental activities.

6.5.2.3 Economic performance

In the annual reports disclosure phase of the study, economic performance, the third dimension in Ullmann's stakeholder model is measured using ROA. While ROA is hypothesised to be positively associated with disclosure, the results of the annual reports disclosure analysis revealed no statistically significant association in oil palm PLCs. However, the survey results are generally supportive of the hypothesis. Some 46% of respondents believe the high cost of data collection and presentation impacts significantly on the decision to disclose (refer to Table 6.5) and 75% see an important association with profitability (refer to Table 6.4).

6.5.3 Environmental activities

In order to solicit environmental information from the non-PLCs whose annual reports are not accessible to the public, Question 12 is developed as an open question to gain insight on what environmental activities/programmes are being implemented by large oil palm government agencies or the smaller oil palm non-PLCs. This is one of the gaps in the literature this study aimed to fill as prior Malaysian studies on social and environmental disclosure focused on public listed companies - Teoh and Thong (1984), Andrew et al. (1989), Hossain, Tan, and Adams (1994), Yusoff, Yatim and Nasir (2004), Ramasamy and Hung (2004), Haniffa and Cooke (2005), Yusoff, Lehman, and Nasir (2006), Amran and Devi (2007), Ghazali (2007), Yusoff, Yusoff, and Lehman (2007), Keng, Roper and Kearins (2007), Amran and Siti-Nabiha (2009), Elijido-Ten (2009), Ghazali (2009) and Othman and Ameer (2010).

Only 16 respondents answered this question (refer to Table 6.2 below). Most of the environmental activities of the sample organisations/companies are donations (38%) – up to RM1 million, training (31%) – up to RM50,000, tree/riparian planting (25%) – up to RM400,000 (riparian areas protect water quality along streams or rivers and planting beneficial trees on riparian reserves protect riverbanks from erosion (OSU 2013), conservation projects (13%) – up to RM5.75 million and other

more specialised activities (6% each), such as stability of altered forest ecosystems (SAFE) – up to RM30 million, treatment of waste – up to RM1 million, biogas plant and rainwater harvesting – up to RM200,000. Of the 16 respondents, only 75% disclose their environmental activities in annual reports or in pamphlets.

Table 6.2: Environmental activities of oil palm PLCs and non-PLCs (including government agencies)

Respondent	Identifiers		Environmental activities	Cost/budget	On-going/one time activity	Is this activity disclosed?
1	non public listed company		Training		On-going	Yes
4	non public listed company		Training, education		On-going	Sometimes
8	public listed company	Federal agency	Donation	RM1 million	On-going	Yes
9	non public listed company	State agency	Rehabilitation project/riparian planting	RM400,000	5 yr plan	Yes
			Community talks	RM5,000	Yearly	Yes
			Training	RM3000	On-going	Yes
11	non public listed company		Donation		On-going	Yes, souvenir programme
12	non public listed company		Donation		On-going	Yes, promotional pamphlets
13	non public listed company		Donation	< RM10,000	On-going	No
18	non public listed company		Donation	RM10,000	On-going	No
21	public listed company		Training	RM50,000-	On-going	Yes
			Donation	RM30,000	On-going	Yes
23	public listed company		Tree planting	RM50,000	On-going	Yes
			Zero discharge of treated effluent	RM1million	On-going	Yes
			Rainwater harvesting	RM200,000	On-going	Yes
24	non public listed company	State agency	Kinabatangan conservation & reforestation		On-going	Yes
			Biogas plant		On-going	Yes
25	non public listed company		Bio-mass	>RM10K	On-going	No
26	public listed company		Training	>RM10K	On-going	Yes
32	non public listed company		Monitoring replanting area	RM30,000	On-going	Yes
37	public listed company		Stability ofaltered forest ecosystems (SAFE)	RM30mil	10 years	Yes
			Tree Planting Initiatives			Yes
			The Big 9 (9 indigeneous animals)	RM5.75mil	3 years	Yes
38	public listed company		Tree planting programme		On-going	Yes

6.5.4 Environmental disclosure

Questions 16 to 18 pertain to the information content of disclosures, characteristics of companies that implement disclosures and dissemination of environmental information.

For those companies responding *important* or *very important*, the four disclosures considered most important in describing the environmental impacts of the oil palm industry are *data on energy consumption* (93%), *data on emissions, effluents and*

wastes (90%) and *biodiversity/environmental/wildlife protection programme* (88%) and *support for public/private action* (88%) - refer to Table 6.3 below.

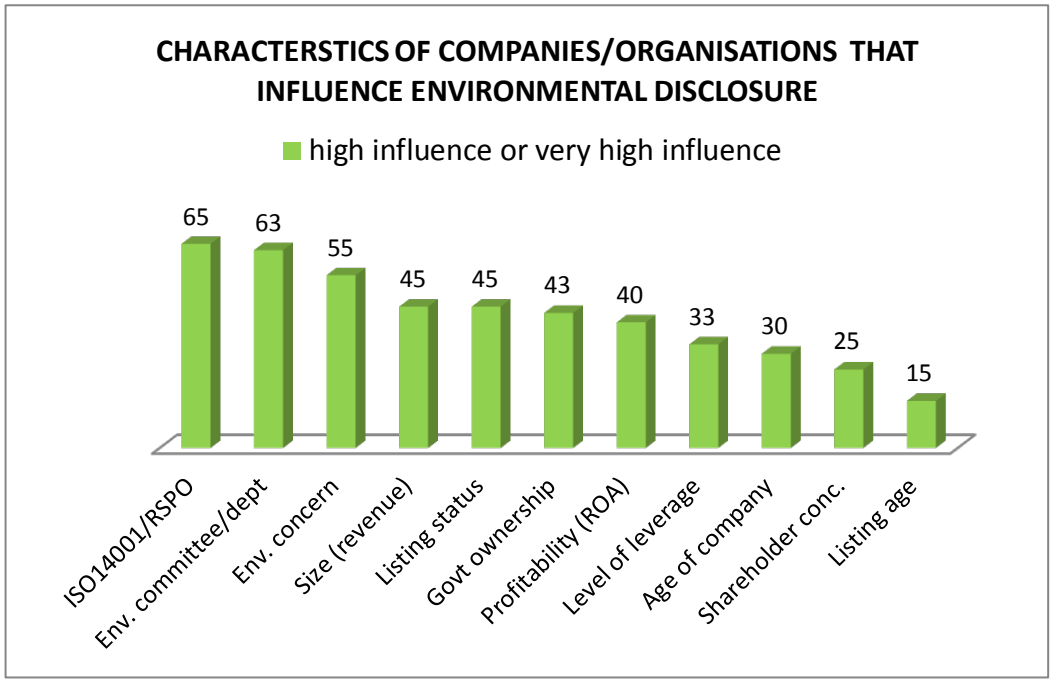
Table 6.3: Measures of environmental impacts

Measures of environmental impacts	Percent (%) response					
	not important	somewhat important	quite important	important	very important	Total
Data on emissions/effluents /wastes	0	0	10	40	50	100
Data on raw materials used/conservation/recycling	5	22.5	17.5	35	20	100
Data on energy consumption/renewable products	0	5	2.5	52.5	40	100
Data on water consumption/recycle/reuse	5	25	10	30	30	100
Biodiversity/environmental/wildlife programme	0	0	12.5	47.5	40	100
Support for public/private action	0	0	12.5	47.5	40	100
Narrative on training/raising awareness	0	5	37.5	37.5	20	100
Stakeholder feedback	2.5	27.5	7.5	37.5	25	100
Presentation of current year cash flows	10	25	40	17.5	7.5	100
CSR/environmental reporting guideline	7.5	25	42.5	17.5	7.5	100

Whether certain characteristics of organisations lead to greater environmental disclosure was also investigated.

For those companies responding *high influence* or *very high influence*, the three most important characteristics of organisations influencing environmental disclosure are possession of an *ISO 14001/RSPO certification* (65%), a dedicated environmental *committee/department* looking into environmental activities (63%) and *environmental concern* expressed in the vision/mission statement/Chairman's statement (55%) - refer to Chart 6.3 below).

Chart 6.3: Characteristics of organisations/companies that influence environmental disclosure



The most popular way of disseminating environmental information by the disclosing sample organisations/companies (ranked from the highest to the lowest) are:

1. Internally to all staff (88%)
2. Annual report (81%)
3. Internally to senior management (75%)
4. Externally through websites (69%)
5. Sustainability report (69%)
6. Externally through news sheets (50%)
7. Externally through pamphlets (44%)
8. Externally to Ministry of Plantation & Commodities (44%)
9. Externally to MPOB (25%)
10. Externally to Auditor-general (6%)
11. Tabled in document to Parliament (6%)

6.5.5 Drivers of and impediments to environmental disclosure

An objective of this survey phase is to gain insight from oil palm senior managers regarding '*the drivers of and impediments to environmental disclosure*' (Objective 3). The respondents are asked to choose from a list of factors obtained from various prior studies (Ahmad, Hassan, and Mohammad 2003; Yusoff, Yusoff, and Lehman 2007; He and Chen 2009) and express an opinion on their relative importance in the disclosure decision.

For those companies responding *important* or *very important* (refer to Table 6.4 below), the most important drivers or motivations of environmental disclosure by the sample organisations/companies are *good corporate citizenship* (100%) and *increase public awareness* (100%).

Table 6.4: Drivers/motivations of environmental disclosure

Drivers/motivations of environmental disclosure	Percentage of respondents					
	not important	somewhat important	quite important	important	very important	Total
Enhance corporate image	0	0	6.25	43.75	50	100
Good corp. citizenship	0	0	0	62.5	37.5	100
Win awards/recognition	12.5	18.75	37.5	6.25	25	100
Improve employee morale	0	0	6.25	50	43.75	100
Increase public awareness	0	0	0	43.75	56.25	100
Attract new investors	0	6.25	25	37.5	31.25	100
Obtain funds from wider sources	12.5	31.25	12.5	37.5	6.25	100
Pressure from stakeholders	12.5	31.25	12.5	37.5	6.25	100
Pressure from government	6.25	18.75	25	31.25	18.75	100
Stability/increase in share price	12.5	18.75	12.5	43.75	12.5	100
Increase profitability	6.25	6.25	12.5	56.25	18.75	100
Compete with other companies	12.5	12.5	12.5	50	12.5	100
Chairman's/management's desire	6.25	0	0	50	43.75	100

Referring to Table 6.5 below, on the scale of *most of the time* or *all the time*, the three (3) main reasons used by companies not to disclose environmental activities are *not to set precedence* (80%), *intervention by government* (67%) and *limited personnel* (58%).

Table 6.5: Impediments to environmental disclosure

Impediments to environmental disclosure	Percentage of respondents					
	never	seldom	sometimes	most of the time	all the time	Total
High cost	8	8	38	25	21	100
Limited personnel	4	4	33	50	8	100
Added value limited	4	13	63	4	17	100
Competitive disadvantage	29	13	46	13	0	100
Intervention by govt	4	4	25	67	0	100
Claims from consumer groups	0	17	29	54	0	100
Increase demands for disclosure	0	8	42	50	0	100
Heighten suspicion	4	17	75	4	0	100
Not to set precedence	0	8	13	42	38	100

6.6 DISCUSSION AND TRIANGULATION OF RESULTS FOR OIL PALM COMPANIES

The following discussion triangulates the findings of the annual report environmental disclosure, interview and survey phases of the study for oil palm organisations only.

6.6.1 Stakeholder power

The annual reports disclosure phase tested 3 stakeholders influence on disclosure - *shareholder power, creditor power* and *government power*. Only *government power*, measured as substantial government ownership in oil palm PLCs is statistically significant at the P<.05 level, consistent with Roberts (1992), Kent and Chan (2009) and Elijido-Ten (2009).

For the interview phase, the 3 most important stakeholders as reported by 7 respondents are *customers/buyers*, *ministry of P&C/government departments* and *senior management*. The 40 survey respondents reported that the 3 most influential stakeholders with *high* or *very high influence* on the type of information disclosed in the annual reports of organisations/companies are the *Board of Directors*, *senior management* and *shareholders/owners* (including government

ownership). All three data sources (annual reports, interviews and surveys) are therefore consistent in identifying a role for *government*.

However, findings from the interviews and survey revealed other important stakeholders, such as *customers/buyers, Board of Directors* or *senior management* which have not previously been included in tests of the Ullmann (1985) stakeholder model.

6.6.2 Strategic posture

3 strategic posture variables were tested for their influence on environmental disclosure – *social/environmental concern (SEC) in the mission/vision/chairman's statement, ISO 14001 certification* and *environmental committee (EC).* Results of the regression analysis showed that all 3 variables are statistically significant and positively associated with voluntary disclosure.

For the interview phase, all the respondents reported that they continually monitor what the stakeholders are thinking about their organisation/company's environmental responsibility (indication of strategic posture). They do this by *adhering to standards imposed by the authorities and implementing good agricultural practices* and *implementing environmental protection programmes and activities.* However, they also reported that their important stakeholders do not influence their organisation's/company's decision to disclose environmental information because *we make our own decision.* Only the PLCs reported that their important stakeholders influence their organisation's/company's decision to disclose environmental information because *our stakeholders need to know that we are committed to safeguard the environment* and *as a public-listed company, we need to uphold our corporate image in the interest of our stakeholders*.

For the survey phase of the study, most of the respondents reported that *environmental concern* is specified in the company's objectives, with a *dedicated*

department/committee looking into environmental matters even though only a small percentage (10%) have fully implemented the *ISO 14001* or *RSPO* requirements. In the annual reports disclosure phase, only 20% of the sample companies possess the ISO 14001 certification. The latter 2 are consistent with the annual reports finding for oil palm companies of 20% implementation as disclosed in their Annual Reports (refer to Table 4.3, Chapter 4). This relatively low level of implementation therefore, does not contradict the annual reports disclosure findings; rather it offers one explanation for the overall low level of disclosure identified, that being a weak strategic posture.

Taken together, findings from the interview and survey phases support the results of the annual reports disclosure analysis, that the variables comprising strategic posture, *SEC, ISO 14001* and *EC* establishment influence environmental disclosure in oil palm companies.

6.6.3 Economic performance

In the annual reports disclosure phase, the regression results showed that the ROA is not significant in explaining environmental disclosure in oil palm PLCs.

For the interview phase, all respondents believe that profitable organisations/companies are more likely to disclose environmental information. The two reasons given are *positive implications of disclosure - better image (good corporate citizens), better profit (financial stability) and better future (sustainability of their operations)* and *profitable companies are in a position to spend money on the environment.*

In the survey phase of the study (with a much larger sample of 40 respondents), 75% see an important association with disclosure and profitability (refer to Table 6.4).

The result is therefore mixed, an insignificant finding in the annual reports disclosure, appears to contradict the relatively strong support for a positive link between disclosure and profitability detected in the interviews and survey data.

6.6.4 Environmental disclosure and extent of environmental disclosure for oil palm companies

This study found that 73% of the sample oil palm companies in the annual reports disclosure phase, 71% in the interview phase and 40% in the survey phase disclose environmental information. This is high compared to a prior study by ACCA whose findings showed that only 10% of the Bursa Malaysia main board listed companies disclose environmental information in 2003 (ACCA 2004), reflecting the overall growth in reporting found in this study (refer to Table 6.6 below).

Table 6.6: Breakdown of disclosing and non-disclosing companies/organisations

			Percentage		
Research phase	Sample selection	Breakdown	Disclosing	Non-disclosing	Total
Phase 1	33 OP & 33 NOP	OP - 24 disclosing; 9 non-disclosing	73	27	100
(annual report environmental disclosure)		NOP - 20 disclosing; 13 non disclosing	61	39	100
Phase 2	OP only	5 disclosing; 2 non-disclosing	71	29	100
(semi-structured interviews)	2 PLCs; 5 non-PLCs	Disclosing - 2 PLCs	40		
		- 3 non-PLCs*	60		
Phase 3	OP only - PLCs & non-PLCs	16 disclosing; 24 non-disclosing	40	60	100
(questionnaire survey)	40 respondents	Disclosing - 9 PLCs**	56		
		- 7 non-PLCs***	44		

* includes 1 government agency
** includes 2 government agencies
*** includes 3 government agencies

The mean environmental disclosure index for oil palm PLCs is 0.20 (refer to Table 4.3, Chapter 4). The extent of environmental disclosure is not measured in the interview and survey phases of the study.

The low environmental index score in this study is consistent with prior Malaysian studies which also reported very low mean disclosure score with Hossain, Tan and Adams (1994) reporting a score of 15.8% (with a sample size of 67 PLCs in the Bursa Malaysia), Haniffa and Cook (2005) at 16.28% (Year 1996) and 17.13% (Year

2002) with a sample size of 139 PLCs from the Bursa Malaysia and Ghazali (2007) at 25.2% with a sample size of 87 PLCs from the Bursa Malaysia.

6.6.5 Drivers of and impediments to environmental disclosure

Table 6.7 below summarises the drivers of and impediments to environmental disclosure from the findings obtained in the interview and survey phases of the study.

Table 6.7: Drivers of and impediments to environmental disclosure

Semi-structured interviews	**Questionnaire survey**
Drivers/motivations	Drivers/motivations
Complying with societal norms (43%)	Good corporate citizenship(100%)
Reward for good feedback (43%)	Increase public awareness (100%)
Impediments	Impediments
Lack of funds and resources (57%)	Not to set precedence (79%)
Lack of awareness/knowledge (29%)	Intervention by government (67%)
Lack of cooperation from the communities (29%)	Limited personnel (58%)

Results of the interview phase revealed that *complying with societal norms* and *reward for good feedback* are the main motivation factors for disclosing environmental information. The survey respondents reported that the most important drivers or motivations of environmental disclosure by the sample organisations/companies are *good corporate citizenship* and to *increase public awareness*.

This is similar to the findings in He and Chen (2009) where voluntary disclosure is seen as a moral obligation to the environment and that it is beneficial for the company. In a Malaysian study by Amran and Siti-Nabiha (2009), disclosure has become an important investor relations strategy for many local companies to attract foreign investments and to position themselves for external markets. Findings from a study conducted by ACCA found that demands for greater disclosure and accountability, meeting customer interest and demand,

relationship management with suppliers and government encouragement are the main drivers pushing business towards reporting (ACCA 2004).

The main impediments to environmental disclosure as revealed by the survey respondents are *not to set precedence* to disclose environmental information because it is not required by law, fear of *government intervention/authorities* when too much negative news is reported and *limited personnel* to collect, process and publish environmental data. The interview respondents cited *lack of funds and resources* as the main impediment to disclosure.

According to Ghazali (2009), the most frequently mentioned reasons for non-disclosure of voluntary information is protecting trade secrets, minimum compliance and negative news. Based on the outcome of this study and consistent with the findings in Ghazali (2009), Malaysian public listed companies are generally fearful of releasing too much information to protect their business. When too much negative news is reported, they also fear that this might alert government authorities to take action.

6.7 SUMMARY

This chapter discussed the results from the questionnaire survey. A discussion of the questionnaire design, sample selection and data collection were covered. A triangulation of the results of the 3 phases of the study was also discussed towards the end of the chapter.

Based on the results of the annual reports disclosure, the most influential stakeholder is the *government*, whose ownership in large oil palm organisations/companies, influence voluntary disclosure practices due to their social agenda (Ghazali 2007). This is supported by findings from the interview phase of the study. However, the interview and survey respondents have unveiled other important and influential stakeholders, i.e. *customers/buyers, Board of*

Directors and *senior management*, whose influence on disclosure has not been investigated in prior Malaysian studies.

Findings from the interview and survey phases generally support the results of the annual report environmental disclosure that the strategic posture variables (SEC, ISO 14001 and EC) influence environmental disclosure in oil palm companies whereas findings are mixed for the influence of ROA on disclosure. A statistically insignificant finding in the annual reports disclosure appears to contradict the relatively strong support for a positive link between disclosure and profitability detected in the interviews and survey data.

A high percentage of oil palm organisations/companies disclose environmental information but the extent of environmental disclosure is quite low, also consistent with prior studies.

The main impediments to environmental disclosure as revealed by the survey respondents are *not to set precedence* to disclose environmental information because it is not required by law, fear of *government intervention/authorities* when too much negative news is reported and *limited personnel* to collect, process and publish environmental data. The interview respondents cited *lack of funds and resources* as the main impediment to disclosure.

The final chapter will summarise the research. It will outline both theoretical and practical contributions of the research, state the research limitations and comment on future research directions.

CHAPTER 7

CONCLUSIONS, LIMITATIONS AND FUTURE DIRECTIONS

7.1 INTRODUCTION

The focus of this research is to examine the determinants of environmental disclosure in the oil palm industry in Malaysia. The concluding chapter provides an overview of the research process and findings, and is followed by an account of its significant theoretical and practical contributions. The limitations of the study are discussed and finally, several opportunities for future research are detailed.

7.2 SUMMARY OF RESEARCH

7.2.1 Overview of study

This study used Ullmann's (1985) three-dimensional stakeholder model to examine the association of stakeholder power, strategic posture and economic performance to environmental disclosure. This quantitative study involves multiple data source approaches to data collection in order to enhance the validity of the findings and to uncover environmental information of non-PLCs/government agencies whose annual reports are not generally accessible to the public. This study therefore utilised interviews and questionnaire surveys to obtain additional environmental disclosure information.

The findings for the following 3 research objectives will be discussed below.

1. To examine the association of stakeholder power, strategic posture and economic performance (based on Ullmann's three-dimensional stakeholder model) and environmental disclosure in Malaysian oil palm companies;

2. To determine the extent of environmental disclosure of Malaysian oil palm and non-oil palm companies; and

3. To determine the drivers of and impediments to environmental disclosure from the perspective of oil palm company managers.

7.2.2 The association of stakeholder power, strategic posture and economic performance on environmental disclosure

Table 7 summarises the findings of the study from the annual reports disclosure, interview and survey phases of the study, which were discussed in detail in Chapter 4, Chapter 5 and Chapter 6 respectively.

Table 7: Comparison of results for annual reports disclosure, interview and survey phases of the study on voluntary environmental disclosure in oil palm companies

Dimensions	**Annual reports environmental disclosure**	**Semi-structured interviews**	**Questionnaire survey**
Three dimensions tested for their impact on voluntary disclosure in Oil Palm companies	Quantitative data obtained using annual reports disclosure based on 165 observations from oil palm PLCs - refer to Chapter 4.	Interview data obtained from 7 interview respondents from oil palm PLCs and non-PLCs - refer to Chapter 5.	Quantitative data obtained from 40 survey respondents from oil palm PLCs and non-PLCs - refer to Chapter 6.
Stakeholder power (the ability of stakeholders to influence corporate management) SP – shareholder power (measured as the proportion of ownership of company held by substantial* shareholders) CR – creditor power (measured as total debts/total assets) GP – government power (substantial* government ownership)	**Stakeholder measures investigated** **Stakeholder power:** (using regression analysis to test the significance of the following stakeholder variables on environmental disclosure) SP (n.s.) CP (n.s.) GP (s)	**Stakeholder measures investigated** **Important stakeholders:** (% of respondents that believed the following to be important stakeholders) Customers/buyers -71% Ministry of P&C - 57% Senior management - 57% Shareholders/owners - 57% Board of Directors - 57% **Stakeholder influence:** (% of respondents that believed important stakeholders influence disclosure)	**Stakeholder measures investigated** **Important stakeholders:** (ranked by survey respondents from 1 – 10, 1 being least important and 10 being most important) <u>Average ranking</u> Shareholders/owners - 8.1 Board of Directors – 7.0 Senior management – 6.5 **Stakeholder influence:** (% of respondents that believed the influence of stakeholders on environmental disclosure to be influential or very influential by type of stakeholder)

*Malaysia's Companies Act 1965 defines substantial shareholder as a person having an interest in not less than 5 percent of the nominal amount of the voting shares in a company (KPDNKK 2006).		Yes - 29% No - 71%	Board of Directors - 85% Senior management - 75% Shareholders/owners - 70%
Strategic posture (ways corporate management responds to stakeholder's environmental demands) SEC-social/environmental concern in the vision/mission/Chairman's statement ISO 14001 – possession of ISO 14001 certification EC – existence of environmental committee	**Strategic posture investigated** (using regression analysis to test the significance of the following strategic posture variables on environmental disclosure) SEC (s) ISO 14001 (s) EC (s)	**Strategic posture investigated** (% of respondents that are continuously monitoring their important stakeholders perception about their company's environmental responsibility) Yes - 100% **Other measures of strategic posture** (% of respondents that implement the following strategic posture in their company/organisation) 1. *Adhering to standards imposed by the authorities and implementing good agricultural practices.* (86%) 2. *Implementation of environmental protection programmes and activities. (86%)*	**Strategic posture investigated** (% of respondents that confirmed the existence of the following strategic posture in their company/organisation) SEC: 83% ISO14001/RSPO: 10% EC: 88% **Other measures of strategic posture** (% of respondents having environmental protection embedded in company culture) Very often or all the time: 55%
Economic performance (influence of company's profitability on disclosure)	**Economic performance investigated** (using regression analysis to test the significance of the ROA on environmental disclosure) ROA (n.s.)	**Economic performance investigated** (% of respondents that believed profitability influence environmental disclosure) Yes – 100%	**Economic performance investigated** (% of respondents that believed profitability (ROA) influence environmental disclosure) Yes - 40% No - 60%

Notes:
s - significant
n.s. - not significant

7.2.2.1 Stakeholder power and environmental disclosure

Stakeholder power is the ability of stakeholders to influence corporate management decisions to disclose information. Power is viewed as a function of the stakeholder's degree of control over resources required by the company (Ullmann 1985). The study found that the *government* is the most powerful stakeholder among three stakeholders examined for oil palm companies, whereas shareholder power and creditors most influenced other company disclosure. The study also revealed other important and influential stakeholders, an outcome of the interview and survey phases of the study. *Customers/buyers*, *Board of Directors* and *senior management* have been nominated by the interview and survey respondents as powerful stakeholders, suggesting these stakeholders could be investigated for their role in voluntary disclosure in future research, particularly in the oil palm industry.

7.2.2.2 Strategic posture and environmental disclosure

Strategic posture relates to how corporate management responds to stakeholder's social demands and a distinction is made between active and passive strategic posture (Ullmann 1985). When company management continuously tries to monitor what stakeholders are thinking about the company's social (environmental) responsibility and undertakes social (environmental) responsibility activities, they possess an active posture. Based on prior studies, three strategic posture variables were examined; *social/environmental concern (SEC), ISO 14001 certification* and *environmental committee/department (EC),* and all were found to be significant predictors of environmental disclosure in oil palm PLCs.

For the interview phase, all the respondents reported that they continually monitor what the stakeholders are thinking about their organisation/company's environmental responsibility (indication of strategic posture). However, they also

reported that their important stakeholders do not influence their organisation's/company's decision to disclose environmental information because *we make our own decision.* Only the PLCs, reported that their important stakeholders influence their organisation's/company's decision to disclose environmental information because *our stakeholders need to know that we are committed to safeguard the environment* and *as a public-listed company, we need to uphold our corporate image in the interest of our stakeholders*. This confirms the result of the annual reports disclosure for PLCs, however it suggest the influence of strategic posture may not extend to non-PLCs.

For the survey phase of the study, only small percentages (10%) have fully implemented the *ISO 14001* or *RSPO* requirements. In the annual reports disclosure phase, only 20% of the sample companies possess the ISO 14001 certification. This relatively low level of implementation does not contradict the annual reports disclosure findings; rather it offers one explanation for the overall low level of disclosure identified, that being a weak strategic posture.

Taken together, findings from the interview and survey phases support the results of the annual reports disclosure, that the variables comprising strategic posture, *SEC, ISO 14001* and *EC* establishment influence environmental disclosure in oil palm companies, particularly those which are publicly listed.

7.2.2.3 Economic performance and environmental disclosure

Economic performance concerns the profitability of a company and thus, the ability of the company to undertake costly social responsibility activities (Ullmann 1985; Roberts 1992; Kent and Chan 2009). The annual reports disclosure analysis found that the ROA as a measure of economic performance is not statistically significant in explaining disclosure in oil palm companies, but is statistically significant for other companies. It is speculated that this difference is due to the role of government power in oil palm companies.

For the interview phase, all respondents believe that profitable organisations/companies are more likely to disclose environmental information. The two reasons given are *positive implications of disclosure - better image (good corporate citizens), better profit (financial stability) and better future (sustainability of their operations)* and *profitable companies are in a position to spend money on the environment.*

In the survey phase of the study, some 46% of respondents believe the high cost of data collection and presentation impacts significantly on the decision to disclose and 75% see an important association with profitability. The result is therefore mixed; a statistically insignificant finding in the annual reports disclosure for oil palm companies appears to contradict the relatively strong support for a positive link between disclosure and profitability detected in the interviews and survey data. As the interview and survey phases of the study were conducted exclusively on oil palm companies this may point to an industry difference. Oil palm company managers believe that disclosures are influenced by cost constraints, however government power appears to override these concerns.

7.2.3 Contingency framework and environmental disclosure

The results reported assume the impact of the explanatory variables on disclosure is largely independent of each other. Ullmann (1985) argues that this approach is simplistic and offers an alternative approach to predict levels of voluntary disclosure using a contingency framework (refer to Figure 3.4, Chapter 3).

Ullmann postulates that only when stakeholder power is high, companies with active strategic posture and good economic performance (situation 1) will deliberately make effort to satisfy their stakeholder's demands through actual social (environmental) performance and its disclosure. Hence, companies that exhibit all three are most likely to display high levels of voluntary environmental disclosure. This 3-way interaction however could not be modelled and appropriately tested

because of the very small number of observations for Ullmann's situation 1, representing only 3 companies each for both OP and NOP.

7.2.4 Extent of environmental disclosure

Prior research has found that public-listed companies (PLCs) in Malaysia generally have low levels of CSR awareness/reporting (Ramasamy and Hung 2004; Keng, Roper, and Kearins 2007; Ghazali 2009; Othman and Ameer 2009; Asria 2010) and fall behind international best practices in CSR.

For this study, environmental disclosure is measured using a ten-point-scoring of environmental factors. The Environmental Disclosure Index (ENVDi) is derived by computing the ratio of actual scores awarded to the maximum score attainable (10) by that company, with information obtained for the year 2005-2009 from annual reports of the sample companies.

Oil palm PLCs were found to disclose more environmental information (0.20) compared to non-oil palm PLCs (0.12) by a statistically significant margin. However, both OP and NOP PLCs share the same median of 0.10 confirming the relatively low environmental disclosure of Malaysian PLCs.

One positive trend noted was that more companies were participating in voluntary environmental disclosure than in the past. This study found that 73% of the sample companies in the annual reports disclosure, 71% in the interviews and 40% in the survey disclosed environmental information. This is high compared to a prior study by ACCA whose findings showed that only 10% of the Bursa Malaysia main board listed companies disclose environmental information in 2003 (ACCA 2004).

ACCA's findings were based on a survey of annual reports and stand-alone environmental reports of all companies from the main Board of the Bursa Malaysia between 1999 and 2001. The criteria they used were 1. Context and commitment,

2. Environmental management, 3. Environmental objectives & targets and achievements, 4. Key Performance Indicators (KPIs), 5. Stakeholder engagement, 6. Environment-related financial information, 7. Candid acknowledgement of negative information, and 8. Third party verification (ACCA 2002). In these respects therefore, ACCA had a much higher threshold for reporting disclosure.

7.2.5 Drivers of and impediments to environmental disclosure

As previously discussed, prior research In Malaysia has found that public-listed companies (PLCs) generally have low levels of CSR awareness and disclosure. In a questionnaire survey carried out in late 2006 and early 2007, the most cited reasons for companies not to provide voluntary disclosure is their fear of releasing too much information to their competitors (Ghazali 2009). This study sought to extend this research to the oil palm industry by examining the the drivers of and impediments to environmental disclosure from the perspective of oil palm company managers.

Results of the interview phase revealed that *complying with societal norms* and *reward for good feedback* are the main motivating factors for disclosing environmental information. The survey respondents reported the most important drivers to be *good corporate citizenship* and to *increase public awareness*. The former is similar to the findings in He and Chen (2009), where voluntary disclosure is seen as a moral obligation to the environment and that it is also beneficial for the company. The latter aligns with another Malaysian study by Amran and Siti-Nabiha (2009), where disclosure has become an important investor relations strategy for many local companies to attract foreign investments and to position themselves for external markets.

The interview and survey respondents revealed that the main impediments to environmental disclosure are *not to set precedence* to disclose environmental information which is not required by law, fear of *government*

intervention/authorities when too much negative news is reported and *lack of funds and resources* to collect, process and publish environmental data.

7.3 CONTRIBUTIONS

The thesis makes several theoretical contributions to voluntary disclosure studies. The findings also point to practical contributions towards understanding the disclosure practices of Malaysian companies and government agencies operating in the oil palm industry.

7.3.1 Theoretical contributions

The adoption of stakeholder theory to study disclosure is motivated by studies highlighting the importance of stakeholders in the reporting process. However the broad ranging definition of stakeholders has resulted in wide range of models being tested with apparently inconsistent results. Ullmann (1985) conducted an extensive study of prior research examining correlations among social disclosure, social performance and economic performance. He concluded that a three-dimensional model, incorporating the elements of stakeholder power, strategic posture and economic performance, could explain almost all correlations between social disclosure, social performance and economic performance.

Although it could not be modelled and appropriately tested, the proposed Ullmann's contingency framework indicates that companies exhibiting high stakeholder power, an active strategic posture and good economic performance also display higher levels of voluntary environmental disclosure. It also suggests its finding is robust when set in a developing country and applied to a single and highly polluting industry.

From a broader stakeholder theory perspective the research unveiled the significance of stakeholders as perceived by managers in this context. The study

found that *government* is the most powerful stakeholder among the stakeholders examined in influencing the disclosure practices of Malaysian oil palm companies. It further revealed *customers/buyers, Board of Directors* and *senior management* to be highly influential. Future studies in this area applying stakeholder theory should consider the inclusion of these stakeholders in their research.

The study identified differences in the drivers of voluntary disclosure in the comparative annual reports disclosure analysis of oil palm and non-oil palm organisations/companies. This has implications for research design in future studies which should carefully consider the effect of any industry difference in their sample.

7.3.2 Practical contributions

According to Ullmann (1985) contingency framework, while individual pressure by stakeholders to encourage disclosure may have some impact, it is only when all three areas of stakeholder power, strategic posture and economic performance are aligned that environmental disclosure is maximised. This may explain the apparent decline in environmental disclosure during the 2008-09 period following a sustained increase in prior years. The global financial crisis and its pressure on the 'bottom line' appear to have caused a downturn in voluntary disclosure. The government, being the most important stakeholder, wishing to increase the levels of environmental disclosure may have no choice other than regulation as it is unlikely voluntary compliance could be uniformly achieved.

The potential role of government is reinforced by this research revealing a low level of voluntary environmental disclosure in Malaysia, including within the oil palm industry. This may lead to calls for government, being the most important and influential stakeholder, to exercise their powers and influence to increase public awareness of the dangers of uncontrolled oil palm cultivation to biodiversity and health of the planet.

The study also revealed that there is a statistically significant difference in extent of voluntary environmental disclosure between oil palm and non-oil palm companies, with the former disclosing more. This may also be due to differences in stakeholder salience between industries. As previously noted, there is strong government ownership in oil palm organisations/companies. Government organisations are generally subject to greater public scrutiny and this may have led to higher disclosure. This may suggest that any government intervention needs to be carefully targeted to account for these industry differences.

Finally, economic performance was found not to be associated with environmental disclosure in oil palm PLCs, but was for other companies. The practical implication of this finding is that the profitability of an organisation/company is not always primary in determining disclosure practices if there are political and social agendas to fulfil. It points to the role of stakeholder power in determining the disclosure policies of the organisation/company, especially where government is the most important stakeholder.

7.4 RESEARCH LIMITATIONS

The results obtained from this study are subject to several limitations. The first limitation of this study is the lack of generalisability due to the country setting where the cultural, institutional, economic and political environment is distinctive to Malaysia. The findings from this study may be useful only in examining disclosure in similar country settings (Teoh and Thong 1984; Van der Laan Smith, Adhikari, and Tondkar 2005; Jose and Lee 2007; Orij 2010).

The second limitation of this study is the choice of proxies for the stakeholder dimension. Results from the interviews revealed that the most important stakeholder is *customers/buyers*. Results from the survey revealed that besides *shareholders/owners*, the *Board of Directors* and *senior management* are very important stakeholders and more influential stakeholders than *shareholders/owners*. The use of an expanded list of proxies as suggested by the

study may result in different outcomes. Similarly, different measure of economic performance such as organisational slack or market returns may yield different results.

A third limitation of the study relates to sample size. The study was constrained by the small population of Malaysian oil palm PLCs. Data was collected over 5 years to obtain sufficient data to test the regression model. Pooling the data in the analyses is problematic because of the possibly differential impact of the global financial crisis during the time window under study. Different results may be apparent if pooled data was not used in the study.

A fourth limitation relates to the variables and measures used to represent various constructs. The measure for government power differs between this study and prior studies. Roberts (1992) used corporate political action committee contribution, Kent and Chan (2009) used prosecutions for breaches of environmental legislation and Elijido-Ten (2009) used companies belonging to environmentally sensitive industries to proxy for government power. This study used substantial government ownership to proxy for government power which may not exactly match the construct being measured. The above 3 prior studies including this study has found government power to have a positive influence on disclosure, even though different proxies have been used in all cases.

Lastly, response bias may affect the accuracy of the interview as well as the survey data. The respondents may not be willing to reveal or willing to provide only a partial picture of the situation in order to cast himself or herself in a socially desirable role or the organisation they work for (Saunders, Lewis, and Thornhill 2009, 327).

7.5 FUTURE RESEARCH DIRECTIONS

Future research should replicate the application of Ullmann's framework to an environmental disclosure study in other industries where the government is an influential stakeholder to test the reliability of the findings of this research.

Future research in voluntary disclosure may also apply alternative measure for stakeholder power, strategic posture and economic performance. As suggested by the findings from the interviews and survey, *customers/buyers*, *Board of Directors* and *senior management* are important and influential stakeholders of organisations/companies. Similarly, a different proxy for economic performance such as organisational slack might yield different outcomes.

Another interesting angle to be further explored is to measure the environmental performance (versus disclosure) of oil palm PLCs. According to Ullmann 1985, voluntary disclosure cannot be substituted for social performance without prior empirical verification no matter how impressive the quantity or quality of the disclosed information.

Future studies can look into testing Ullmann's contingency framework in similar or perhaps, other research settings. This could not be modelled and appropriately tested in this study because of insufficient data for Ullmann's situation 1 in this sample.

Prior disclosure research has focused on PLCs whose annual reports are publicly available. The interview and survey results from this study provide some evidence that unlisted companies are not identical in their outlook to listed companies where disclosure decisions are concerned. More research is required in this significant segment of the market.

REFERENCES

ACCA. 2002. The State of Corporate Environmental Reporting in Malaysia. Certified Accountants Educational Trust. Accessed May 26, 2010.

———. 2004. Report Summary: The State of Corporate Environmental and Social Reporting in Malaysia. ACCA Malaysia. Accessed May 26, 2010, www.accaglobal.com/documents/malaysian_state_of_ser2004.pdf.

———. 2005. Sustainability Reporting Guidelines for Malaysian Company. Accaglobal. Accessed May 26, 2010, http://www2.accaglobal.com/pubs/general/activitiesx/library/sustainability/sus_archive/sus_guidelines_my05.pdf.

Adams, C.A., Wan-Ying Hill, and C.B. Roberts. 1998. "Corporate Social Reporting Practices in Western Europe: Legitimising Corporate Behaviour?" *The British Accounting Review* 30 (1): 1-21.

Aerts, W. 2005. "Picking up the Pieces: Impression Management in the Retrospective Attributional Framing of Accounting Outcomes." *Accounting, Organizations and Society* 30 (6): 493-517.

Ahmad, A.L., S. Ismail, and S. Bhatia. 2003. "Water Recycling from Palm Oil Mill Effluent (Pome) Using Membrane Technology." *Desalination* 157: 87-95.

Ahmad, Z., S. Hassan, and J. Mohammad. 2003. "Determinants of Environmental Reporting in Malaysia." *International Journal of Business Studies* 11 (1): 69-90.

Al-Tuwaijri, S.A., T.E. Christensen, and K. E. Hughes II. 2004. "The Relations among Environmental Disclosure, Environmental Performance, and Economic Performance: A Simultaneous Equations Approach." *Accounting, Organizations and Society* 29: 447-471.

Alnajjar, F.K. 2000. "Determinants of Social Responsibility Disclosures of U.S. Fortune 500 Firms: An Application of Content Analysis." *Advances in Environmental Accounting & Management* 1: 163-200.

Amran, A., and S.S. Devi. 2007. "Corporate Social Reporting in Malaysia: A Political Theory Perspective." *Malaysian Accounting Review* 6 (1): 19-44.

Amran, A., and A.K. Siti-Nabiha. 2009. "Corporate Social Reporting in Malaysia: A Case of Mimicking the West or Succumbing to Local Pressure." *Social Responsibility Journal* 5 (3): 358-375.

Anderson, J.C., and A.W. Frankle. 1980. "Voluntary Social Reporting: An Iso-Beta Portfolio Analysis." *The Accounting Review* 55 (3): 467-479.

Andrew, B.H., F.A. Gul, J.E. Guthrie, and H.Y. Teoh. 1989. "A Note on Corporate Social Disclosure Practices in Developing Countries; the Case of Malaysia and Singapore." *British Accounting Review* 21: 371-376.

Asria. 2010. Sri in Asian Emerging Markets: Malaysia. Asria. Accessed May 26, 2010, http://www.asria.org/publications.

Balabanis, G., H.C. Phillips, and J. Lyall. 1998. "Corporate Social Responsibility and Economic Performance in the Top British Companies: Are They Linked?" *European Business Review* 98 (1): 25-44.

Baltaggi, B.H., G. Bresson, and A. Pirotte. 2008. "To Pool or Not to Pool?" In *The Econometrics of Panel Data: Fundamentals and Recent Developments in Theory and Practice*, ed. L. Matyas and P. Sevestre (eds), 517-545. Verlag Berlin Heidelberg: Springer.

Barth, M.E., and M.F. McNichols. 1994. "Estimation and Market Valuation of Environmental Liabilities Relating to Superfund Sites." *Journal of Accounting Research* 32 (3): 177-209.

Barth, M.E., M.F. McNichols, and G. Peter Wilson. 1997. "Factors Influencing Firms' Disclosures About Environmental Liabilities." *Review of Accounting Studies* 2 (1): 35-64.

Basiron, Y. 2009. "Malaysian Palm Oil: Commitment Towards Food Security and Sustainability." In *Global Oil and Facts Forum 2009*, *New Orleans, Louisiana, USA*. http://www.americanpalmoil.com/pdf.

Basiron, Y., and K.W. Chan. 2004. "The Oil Palm and Its Sustainability." *Journal of Oil Palm Research* 16 (1): 1-10.

Beets, S.D., and C.C. Souther. 1999. "Corporate Environmental Reports: The Need for Standards and an Environmental Assurance Service." *Accounting Horizons* 13 (2): 129-145.

Belkaoui, A.R., and P.G. Karpik. 1989. "Determinants of the Corporate Decision to Disclose Social Information." *Accounting, Auditing & Accountability Journal* 2 (1): 36-51.

Belkaoui, A. 1976. "The Impact of the Disclosure of the Environmental Effects of Organizational Behavior on the Market." *Financial Management (1972)* 5 (4): 26-31.

Berthelot, S., D. Cormier, and M. Magnan. 2003. "Environmental Disclosure Research: Review and Synthesis." *Journal of Accounting Literature* 22: 1-44.

Bewley, K., and Y. Li. 2000. "Disclosure of Environmental Information by Canadian Manufacturing Companies: A Voluntary Disclosure Perspective." *Advances in Environmental Accounting & Management* 1: 206-226.

Blacconiere, W.G., and D.M. Patten. 1994. "Environmental Disclosures, Regulatory Costs, and Changes in Firm Value." *Journal of Accounting and Economics* 18 (3): 357-377.

Botosan, C.A. 1997. "Disclosure Level and the Cost of Equity Capital." *The Accounting Review* 72 (3): 323-349.

Brannen, J. 2005. "Mixing Methods: The Entry of Qualitative and Quantitative Approaches into the Research Process." *International Journal of Social Research Methodology* 8 (3): 173-184.

Brown, N., and C. Deegan. 1998. "The Public Disclosure of Environmental Performance Information -- a Dual Test of Media Agenda Setting Theory and Legitimacy Theory." *Accounting & Business Research* 29 (1): 21-41.

Brueckner, M. 2010. *The Business with the Environment: A (Different) Reader*. Victoria: Cengage Learning.

Burritt, R.L. 2002. "Environmental Reporting in Australia: Current Practices and Issues for the Future." *Business Strategy and the Environment* 11 (6): 391-406.

Bursamalaysia. 2004. Best Practices in Corporate Disclosure. Bursa Malaysia. Accessed March 12, 2012, http://www.sc.com.my/eng/html/cg/pdf/BestPracticesInCorporateDisclosures_bursaMalaysia.pdf.

———. 2006. Corporate Social Responsibility (Csr) Framework for Malaysian Public Listed Companies. Bursa Malaysia. Accessed May 26, 2010, http://www.bursamalaysia.com.

———. 2011. Corporate Disclosure Guide. Bursa Malaysia. Accessed July 19, 2012, http://www.mia.org.my/new/downloads/circularsandresources/circulars/2011/50/50-2011CD_Guide.pdf.

———. 2012. Listing Requirements of Bursa Malaysia Securities Berhad. Bursa Malaysia. Accessed July 12, 2013, http://bizpointgroup.com/uploads/LRMBSB.pdf.

Choi, F.D.S. 1973. "Financial Disclosure and Entry to the European Capital Market." *Journal of Accounting Research* 11 (2): 159-175.

Chong, K.Y. 2012a. "Hidden Power Behind the Blatant Pome Discharge?" *Sabah Daily Express*, 5 August.

———. 2012b. "How Palm Oil Mill Effluents Kill a River." *Sabah Daily Express*, August 5.

Chow, C.W., and Adrian Wong-Boren. 1987. "Voluntary Financial Disclosure by Mexican Corporations." *Accounting Review* 62 (3): 533-541.

Christie, A.A., and J.L. Zimmerman. 1994. "Efficient and Opportunistic Choices of Accounting Procedures: Corporate Control Contests." *The Accounting Review* 69 (4): 539-566.

Clarkson, M.E. 1995. "A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance." *Academy of Management Review* 20 (1): 92-117.

Clarkson, P.M., Y. Li, and G.D. Richardson. 2004. "The Market Valuation of Environmental Capital Expenditures by Pulp and Paper Companies." *Accounting Review* 79 (2): 329-353.

Clarkson, P.M., Y. Li, G.D. Richardson, and F.P. Vasvari. 2006. "Revisiting the Relation between Environmental Performance and Environmental Disclosure: An Empirical Analysis." *Accounting, Organizations and Society* 33 (4-5): 303-327.

Clatworthy, M., and M.J. Jones. 2003. "Financial Reporting of Good News and Bad News: Evidence from Accounting Narratives." *Accounting & Business Research* 33 (3): 171-185.

Cochran, P.L., and R.A. Wood. 1984. "Corporate Social Responsibility and Financial Performance." *Academy of Management Journal* 27 (1): 42-56.

Corley, R.H.V. 2009. "How Much Palm Oil Do We Need?" *Environmental Science & Policy* 12: 134-139.

Cormier, D., and M. Magnan. 1997. "Investors' Assessment of Implicit Environmental Liabilities: An Empirical Investigation." *Journal of Accounting and Public Policy* 16 (2): 215-241.

———. 2003. "Environmental Reporting Management: A Continental European Perspective." *Journal of Accounting and Public Policy* 22 (1): 43-62.

Cornell, B., and A. Shapiro. 1987. "Corporate Stakeholders and Corporate Finance." *Financial Management* 16 (5-14).

Corporateregister. 2012. Company Profile. Corporate Register. Accessed October 26, 2012, http://www.corporateregister.com.

Cowen, S.S., L.B. Ferreri, and L.D. Parker. 1987. "The Impact of Corporate Characteristics on Social Responsibility Disclosure: A Typology and Frequency-Based Analysis." *Accounting, Organizations and Society* 12 (2): 111-122.

Creswell, J.W. 2003. *Reseach Design: Qualitative, Quantitative and Mixed Methods Approaches*, *2nd Ed.* Thousand Oaks: Sage.

Creswell, J.W., V.L.P. Clark, M.L. Gutmann, and W.E. Hanson. 2003. "Advanced Mixed Methods Research Designs." In *A. Tashakkori & C. Teddlie (Eds.), Handbook of mixed methods in social and behavioral research* London: Sage.

Deegan, C. 2002. "The Legitimising Effect of Social and Environmental Disclosures - a Theoretical Foundation." *Accounting, Auditing & Accountability Journal* 15 (3): 282-311.

———. 2009. *Australian Financial Accounting*. 5 ed. NSW: McGraw-Hill Irwin.

Deegan, C., and B. Gordon. 1996. "A Study of the Environmental Disclosure Practices of Australian Corporations." *Accounting & Business Research* 26: 187-199.

Deegan, C., and M. Rankin. 1996. "Do Australian Companies Report Environmental News Objectively? An Analysis of Environmental Disclosures by Firms Prosecuted Successfully by the Environmental Protection Authority." *Accounting, Auditing & Accountability Journal* 9 (2): 50-67.

Deegan, C., M. Rankin, and J. Tobin. 2002. "An Examination of the Corporate Social and Environmental Disclosures of Bhp from 1983-1997: A Test of Legitimacy Theory." *Accounting, Auditing & Accountability Journal* 15 (3): 312-343.

Diamond, D.W., and R.E. Verrecchia. 1991. "Disclosure, Liquidity, and the Cost of Capital." *Journal of Finance* 46 (4): 1325-1359.

Dielman, T.E. 1983. "Pooled Cross-Sectional and Time Series Data: A Survey of Current Statistical Methodology." *The American Statistician* 37 (2): 111-122.

Dillman, D.A. 2007. *Mail and Internet Surveys: The Tailored Design Method*. 2nd ed. Hobeken, NJ: Wiley.

DiMaggio, P.J., and W.W. Powell. 1983. "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields." *American Sociological Review* 48 (2): 147-160.

Dye, R.A. 2001. "An Evaluation of "Essays on Disclosure" and the Disclosure Literature in Accounting." *Journal of Accounting and Economics* 32 (1-3): 181-235.

EC. 2009. International Accounting Standard 18 Revenue European Commission. Accessed Dec 2, 2013, http://ec.europa.eu/internal_market/accounting/docs/consolidated/ias18_en.pdf.

Elijido-Ten, E. 2007. "Applying Stakeholder Theory to Analyze Corporate Environmental Performance." *Asian Review of Accounting* 15 (2): 164-184.

———. 2009. "Can Stakeholder Theory Add to Our Understanding of Malaysian Environmental Reporting Attitudes?" *Malaysian Accounting Review* 8 (2): 85-110.

FAOSTAT. 2010. Top Production - Palm Oil - 2010. FAO. Accessed May 12, 2013, http://faostat.fao.org/site/339/default.aspx.

Fassin, Y. 2009. "The Stakeholder Model Refined." *Journal of Business Ethics* 84 (1): 113-135.

Fekrat, M.A., C. Inclan, and D. Petroni. 1996. "Corporate Environmental Disclosures: Competitive Disclosure Hypothesis Using 1991 Annual Report Data." *The International Journal of Accounting* 31 (2): 175-195.

Felda. 2010. Felda Profile. Felda. Accessed October 22, 2010, http://www.felda.net.my.

Feldaholdings. 2012. Our Corporate Profile. Feldaholdings. Accessed January 11, 2013, http://www.feldaholdings.com.

Field, A. 2009. *Discovering Statistics Using Spss*. 3rd ed. London: SAGE.

Fishman, M.J., and K.M. Hagerty. 1989. "Disclosure Decisions by Firms and the Competition for Price Efficiency." *Journal of Finance* 44 (3): 633-646.

Fitzherbert, E.B., M.J. Struebig, Alexandra Morel, Finn Danielsen, Carsten A. Bruhl, Paul F. Donald, and Ben Phalan. 2008. "How Will Oil Palm Expansion Affect Biodiversity?" *Trends in Ecology and Evolution* 23 (10): 535-545.

Foster, G. 1986. *Financial Statement Analysis*. 2 ed. Englewood Cliffs, NJ: Prentice Hall.

Freedman, M., and A.J. Stagliano. 1991. "Differences in Social-Cost Disclosures: A Market Test of Investor Reactions." *Accounting, Auditing & Accountability Journal* 4 (1): 68-83.

Freedman, M., and C. Wasley. 1990. "The Association between Environmental Performance and Environmental Disclosures in Annual Reports and 10ks." *Advances in Public Interest Accounting* 3: 183-193.

Freeman, R. 1984. *Strategic Management: A Stakeholder Approach*. Marshfield: Pitman.

Freeman, R. E., and John McVea. 2001. "A Stakeholder Approach to Strategic Management." *SSRN eLibrary*.

Freeman, R.E. 2010. "Managing for Stakeholders: Trade-Offs or Value Creation." *Journal of Business Ethics* 96: 7-9.

Frooman, J. 1999. "Stakeholder Influence Strategies." *The Academy of Management Review* 24 (2): 191-205.

Gamble, G.O., K. Hsu, D. Kite, and R.R. Radtke. 1995. "Environmental Disclosures in Annual Reports and 10ks: An Examination." *Accounting Horizons* 9 (3): 34-54.

Ghazali, N.A.M. 2007. "Ownership Structure and Corporate Social Responsibility Disclosure: Some Malaysian Evidence." *Corporate Governance* 7 (3): 251-266.

———. 2009. "Voluntary Disclosure in Malaysian Annual Report." *Accountants Today* January: 24-25.

Gray, R., R. Kouhy, and S. Lavers. 1995. "Corporate Social and Environmental Reporting: A Review of the Literature and a Longitudinal Study of Uk Disclosure." *Accounting, Auditing & Accountability Journal* 8 (2): 47-77.

Gray, R., D. Owen, and C. Adams. 1996. *Accounting and Accountability: Changes and Challenges in Corporate Social and Environmental Reporting*. London: Prentice Hall.

GRI. 2011. G3.1 Sustainability Reporting Guidelines. GRI. Accessed May 16, 2012, https://www.globalreporting.org/reporting/latest-guidelines/g3-1-guidelines/Pages/default.aspx.

Guba, E.G., and Y.S. Lincoln. 1994. "Competing Paradigms in Qualitative Research." In *Handbook of Qualitatie Research*, eds N.K. Denzin and Y.S. Lincoln, 105-117. Thousand Oaks, CA: Sage.

Gujarati, D.N., and D.C. Porter. 2009. *Basic Econometrics*. 5th ed. New York: McGraw Hill.

Guthrie, J.E., and L.D. Parker. 1990. "Corporate Social Disclosure Practice: A Comparative International Analysis." *Advances in Public Interest Accounting* 3 (2): 159-176.

Guthrie, J., and L.D. Parker. 1989. "Corporate Social Reporting: A Rebuttal of Legitimacy Theory." *Accounting and Business Research* 19 (76): 343-352.

Hackston, D., and M.J. Milne. 1996. "Some Determinants of Social and Environmental Disclosures in New Zealand Companies." *Accounting, Auditing & Accountability Journal* 9 (1): 77-108.

Haniffa, R.M., and T.E. Cooke. 2005. "The Impact of Culture and Governance on Corporate Social Reporting." *Journal of Accounting and Public Policy* 24: 391-430.

He, M. , and J. Chen. 2009. "Sustainable Development and Corporate Environmental Responsibility: Evidence from Chinese Corporations." *Journal of Agricultural and Environmental Ethics* 22: 323-339.

Hirshleifer, D., and S.H. Teoh. 2003. "Limited Attention, Information Disclosure, and Financial Reporting." *Journal of Accounting and Economics* 36 (1-3): 337-386.

Hobson, J.L., and S.J. Kachelmeier. 2005. "Strategic Disclosure of Risky Prospects: A Laboratory Experiment." *The Accounting Review* 80 (3): 825-846.

Holthausen, R.W. 1990. "Accounting Method Choice: Opportunistic Behavior, Efficient Contracting, and Information Perspectives." *Journal of Accounting and Economics* 12 (1–3): 207-218.

Hossain, M., M. H. B. Perera, and A. R. Rahman. 1995. "Voluntary Disclosure in the Annual Reports of New Zealand Companies." *Journal of International Financial Management & Accounting* 6 (1): 69-87.

Hossain, M., L.M. Tan, and M.B. Adams. 1994. "Voluntary Disclosure in an Emerging Capital Market: Some Empirical Evidence from Companies Listed on the Kuala Lumpur Stock Exchange." *International Journal of Accounting* 29: 334-351.

Hughes II, K. E. 2000. "The Value Relevance of Nonfinancial Measures of Air Pollution in the Electric Utility Industry." *Accounting Review* 75 (2): 209.

Hughes, S.B., A. Anderson, and S. Golden. 2001. "Corporate Environmental Disclosures: Are They Useful in Determining Environmental Performance?" *Journal of Accounting and Public Policy* 20 (3): 217-240.

Husillos, J., and M.J. Álvarez-Gil. 2008. "A Stakeholder-Theory Approach to Environmental Disclousures by Small and Medium Enterprises (Smes)." *Revista de Contabilidad - Spanish Accounting Review* 11 (1): 125-156.

Ingram, R.W., and K.B. Frazier. 1980. "Environmental Performance and Corporate Disclosure." *Journal of Accounting Research* 18 (2): 614-622.

ISO14001. 2011. ISO 14001 Guide. ISO14001. Accessed May 16, 2012, http://www.iso14001.com.au/.

Jaffar, R., T.M. Iskandar, and J. Muhamad. 2002. "An Investigation of Environmental Disclosures in Malaysia." In *Paper presented in the Accounting Association of Australia and New Zealand (AAANZ), Perth, Australia*.

Jensen, M.C., and W.H. Meckling. 1976. "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure." *Journal of Financial Economics* 3 (4): 305-360.

Johnson, R.B., and A.J. Onwuegbuzie. 2004. "Mixed Methods Research: A Research Paradigm Whose Time Has Come." *Educational Researcher* 33 (7): 14-26.

Jose, A., and Shang-Mei Lee. 2007. "Environmental Reporting of Global Corporations: A Content Analysis Based on Website Disclosures." *Journal of Business Ethics* 72 (4): 307-321.

Keng, K.T., J. Roper, and K. Kearins. 2007. "Corporate Social Reporting in Malaysia: A Qualitative Approach." *International Journal of Economics and Management* 1 (3): 453-475.

Kent, P., and C. Chan. 2009. "Application of Stakeholder Theory to Corporate Environmental Disclosures." *Corporate Ownership & Control,* 7 (1): 399-414.

Kolk, A. 2003. "Trends in Sustainability Reporting by the Fortune Global 250." *Business Strategy and the Environment* 12 (5): 279-291.

———. 2004. "A Decade of Sustainability Reporting: Developments and Significance." *International Journal of Environment and Sustainable Development* 3 (3): 51-64.

KPDNKK. 2006. Companies Act 1965. The Commissioner of Law Revision, Malaysia. Accessed March 7, 2013, http://www.kpdnkk.gov.my/kpdnkk-theme/images/pdf/CompaniesAct1965.pdf.

Krippendorff, K. 1980. *Content Analysis: An Introduction to Its Methodology*. London: Sage.

Krische, S.D. 2005. "Investors' Evaluations of Strategic Prior-Period Benchmark Disclosures in Earnings Announcements." *The Accounting Review* 80 (1): 243-268.

Lev, B. 1992. "Information Disclosure Strategy." *California Management Review* 34 (4): 9-32.

Li, Y. and B.J. McConomy. 1999. "An Empirical Examination of Factors Affecting the Timing of Environmental Accounting Standard Adoption and the Impact on Corporate Valuation." *Journal of Accounting, Auditing & Finance* 14 (3): 279-313.

Lian, P.K., and D. Wilcove. 2007. "Cashing in Palm Oil for Conservation." *Nature* 448 (30 August): 993-994.

———. 2008. "Is Oil Palm Agriculture Really Destroying a Tropical Diversity?" *Conservation Letters xx*: 1-5.

Lincoln, Y.S., and E.G. Guba. 2000. "Paradigmatic Controversies, Contradictions, and Emerging Confluence." In *Handbook of Qualitative Research*, eds N.K. Denzin and Y.S. Lincoln, 163-188. Thousand Oaks, CA: Sage.

Lydenberg, S. 2005. *Corporations and the Public Interest: Guiding the Invisible Hand*. San Francisco, CA: Berrett-Koehler.

Mackenzie, N., and S. Knipe. 2006. "Research Dilemmas: Paradigms, Methods and Methodology." *Issues in Educational Research* 16 (2): 193-205.

Magness, V. 2006. "Strategic Posture, Financial Peformance and Environmental Disclosure: An Empirical Test of Legitimacy Theory." *Accounting, Auditing & Accountability Journal* 19 (4): 540-563.

Man, K.L., K.T. Tan, K.T. Lee, and A.R. Mohamed. 2009. "Malaysian Palm Oil: Surviving the Food Versus Fuel Dispute for Sustainable Future." *Renewable and Sustainable Energy Reviews* 13: 1456-1464.

McMorrow, J., and M.A. Talip. 2001. "Decline of Forest Area in Sabah, Malaysia: Relationship to State Policies, Land Code and Land Capability." *Global Environment Change* 11: 217-230.

Meek, G.K., C.B. Roberts, and S.J. Gray. 1995. "Factors Influencing Voluntary Annual Report Disclosures by U.S., U.K. And Continental European Multinational Corporations." *Journal of International Business Studies* 26 (3): 555-572.

Mertens, D.M. 2005. *Research Methods in Education and Psychology: Integrating Diversity with Quantitative and Qualitative Approaches*, *2nd Ed.* Thousand Oaks: Sage.

Miller, G.S. 2002. "Earnings Performance and Discretionary Disclosure." *Journal of Accounting Research* 40 (1): 173-204.

Mitchell, R.K., B.R. Agle, and D.J. Wood. 1997. "Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts." *Academy of Management Review* 22 (4): 853-886.

Morse, J.M. 2005. "Evolving Trends in Qualitative Research: Advances in Mixed-Method Design." *Qualitative Health Research* 15 (5): 583-585.

MPOB. 2011. Overview of the Malaysian Oil Palm Industry 2011. MPOB. Accessed January 11, 2013, http://www.mpob.com.my.

Neu, D., H. Warsame, and K. Pedwell. 1998. "Managing Public Impressions: Environmental Disclosures in Annual Reports." *Accounting, Organizations and Society* 23 (3): 265-282.

Niskanen, J., and T. Nieminen. 2001. "The Objectivity of Corporate Environmental Reporting: A Study of Finnish Listed Firms' Environmental Disclosures." *Business Strategy & the Environment (John Wiley & Sons, Inc)* 10 (1): 29-37.

O' Donovon, G. 2002. "Environmental Disclosures in the Annual Report: Extending the Applicability and Predictive Power of Legitimacy Theory." *Accounting, Auditing & Accountability Journal* 15: 344-347.

Onwuegbuzie, A.J., and N.L. Leech. 2005. "On Becoming a Pragmatic Researcher: The Importance of Combining Quantitative and Qualitative Research Methodologies." *International Journal of Social Research Methodology* 8 (5): 375-387.

Orij, R. 2010. "Corporate Social Disclosures in the Context of National Cultures and Stakeholder Theory." *Accounting, Auditing & Accountability Journal* 23 (7): 868-889.

OSU. 2013. Understanding the Benefits of Healthy Riparian Areas. Ohio State University. Accessed July 16, http://ohioline.osu.edu/ls-fact/0001.html.

Othman, R., and R. Ameer. 2009. "Corporate Social and Environmental Reporting: Where Are We Heading? A Survey of the Literature." *International Journal of Disclosure and Governance* 6 (4): 298-320.

———. 2010. "Environmental Disclosures of Palm Oil Plantation Companies in Malaysia: A Tool for Stakeholder Engagement." *Corporate Social Responsibility and Environmental Management* 17 (1): 52-62.

Patten, D.M. 1991. "Exposure, Legitimacy, and Social Disclosure." *Journal of Accounting and Public Policy* 10 (4): 297-308.

———. 1992. "Intra-Industry Environmental Disclosures in Response to the Alaskan Oil Spill: A Note on Legitimacy Theory." *Accounting, Organizations and Society* 17 (5): 471-475.

Patten, D.M., and J.R. Nance. 1998. "Regulatory Cost Effects in a Good News Environment: The Intra-Industry Reaction to the Alaskan Oil Spill." *Journal of Accounting and Public Policy* 17 (4-5): 409-429.

Patten, D.M., and G. Trompeter. 2003. "Corporate Responses to Political Costs: An Examination of the Relation between Environmental Disclosure and Earnings Management." *Journal of Accounting and Public Policy* 22 (1): 83-94.

Phillips, R. 2003. "Stakeholder Legitimacy." *Business Ethics Quarterly* 13 (1): 25-41.

Rainforestjournal. 2013. Dipterocarp Trees. Rainforest Journal. Accessed October 18, 2013, http://www.rainforestjournal.com/dipterocarp-trees/.

Ramasamy, B. , and W.T. Hung. 2004. "A Comparative Analysis of Corporate Social Responsibility Awareness: Malaysian and Singaporean Firms." *The Journal of Corporate Citizenship* 13: 109-123.

Richardson, A.J., and M. Welker. 2001. "Social Disclosure, Financial Disclosure and the Cost of Equity Capital." *Accounting, Organizations and Society* 17 (6): 595-612.

Roberts, R. 1992. "Determinants of Corporate Social Responsibility Disclosure: An Application of Stakeholder Theory." *Accounting, Organizations and Society* 17 (7): 595-612.

Robson, C. 2002. *Real World Research*. 2nd ed. Oxford: Blackwell.

Rockness, J.W. 1985. "An Assessment of the Relationship between Us Corporate Environmental Performance and Disclosure." *Journal of Business Finance & Accounting* 12 (3): 339-354.

RSPO. 2010. Why RSPO Certification. RSPO. Accessed October 22, 2010, http://www.rspo.org/en/why_rspo_certification.

Saunders, M., P. Lewis, and A. Thornhill. 2009. *Research Methods for Business Students*. fifth ed. London: Pearson Education Limited.

Schrand, C.M., and B.R. Walther. 2000. "Strategic Benchmarks in Earnings Announcements: The Selective Disclosure of Prior-Period Earnings Component." *The Accounting Review* 75 (2): 151-177.

Singh, D.R., and J.M. Ahuja. 1983. "Corporate Social Reporting in India." *The International Journal of Accounting* (Spring): 151-169.

Slater, A., and S. Gilbert. 2004. "The Evolution of Business Reporting: Make Room for Sustainability Disclosure." *Environmental Quality Management* 14 (1): 41-48.

Smith, M., K. Yahya, and A.M. Amiruddin. 2007. "Environmental Disclosure and Performance Reporting in Malaysia." *Asian Review of Accounting* 15 (2): 185-199.

Spicer, B.H. 1978. "Investors, Corporate Social Performance and Information Disclosure: An Empirical Study." *The Accounting Review* 53 (1): 94-111.

Sumathi, S., S.P. Chai, and A.R. Mohamed. 2008. "Utilization of Oil Palm as a Source of Renewable Energy in Malaysia." *Renewable and Sustainable Energy Reviews* 12: 2402-2421.

Tabachnick, B.G., and L.S. Fidell. 2007. *Using Multivariate Statistics*. 5 ed. Boston: Allyn & Bacon.

Teoh, C.H. 2002. The Palm Oil Industry in Malaysia: From Seed to Frying Pan. WWF Switzerland. Accessed October 22, 2010, http://assets.panda.org/downloads/oilpalmchainpartaandb_esri.pdf.

Teoh, H.Y. , and G. Thong. 1984. "Another Look at Corporate Social Responsibility and Reporting: An Empirical Study in a Developing Country." *Accounting, Organizations and Society* 9 (2): 189-206.

Theodora. 2012. Malaysia Economy 2012. Theodora. Accessed January 11, 2013, http://theodora.com/wfbcurrent/malaysia/malaysia_economy.html.

Tilt, C. 1994. "The Influence of External Pressure Groups on Corporate Social Disclosure." *Accounting, Auditing & Accountability Journal* 7: 47-72.

Trotman, K.T., and G.W. Bradley. 1981. "Associations between Social Responsibility Disclosure and Characteristics of Companies." *Accounting, Organizations and Society* 6 (4): 355-362.

Tsang, E.W.K. 1998. "A Longitudinal Study of Corporate Social Reporting in Singapore the Case of the Banking, Food and Beverages and Hotel Industries." *Accounting, Auditing & Accountability Journal* 11 (5): 624-648.

Ullmann, A. 1985. "Data in Seach of a Theory: A Critical Examination of the Relationship among Social Performance, Social Disclosure and Economic Performance." *Academy of Management Review* 10 (3): 540-577.

UN. 1987. Report of the World Commission on Environment and Development - Our Common Future. United Nations. Accessed July 17, 2013, http://conspect.nl/pdf/Our_Common_Future-Brundtland_Report_1987.pdf.

———. 1992. United Nations Sustainable Development - Agenda 21. United Nations. Accessed July 19, 2013, http://sustainabledevelopment.un.org/content/documents/Agenda21.pdf.

Van der Laan Smith, J., A. Adhikari, and R.H. Tondkar. 2005. "Exploring Differences in Social Disclosures Internationally: A Stakeholder Perspective." *Journal of Accounting and Public Policy* 24 (2): 123-151.

Verma, J., F. Gagliardi, and C. Ferretti. 2009. "On Pooling Data and Measures." DMQ Working Paper 84/09. University of Sienna. Italy.

Verrecchia, R.E. 1983. "Discretionary Disclosure." *Journal of Accounting and Economics* 5: 179-194.

———. 2001. "Essays on Disclosure." *Journal of Accounting and Economics* 32 (1–3): 97-180.

Walden, W.D., and B.N. Schwartz. 1997. "Environmental Disclosures and Public Policy Pressure." *Journal of Accounting and Public Policy* 16: 125-154.

Watson, A., P. Shrives, and C. Marston. 2002. "Voluntary Disclosure of Accounting Ratios in the Uk." *The British Accounting Review* 34 (4): 289-313.

Watts, R., and J. Zimmerman. 1986. *Positive Accounting Theory*. Englewood Cliffs: Prentice-Hall.

Welker, M. 1995. "Disclosure Policy, Information Asymmetry, and Liquidity in Equity Markets." *Contemporary Accounting Research* 11 (2): 801-827.

Wicke, B., V. Dornburg, M. Junginger, and A. Faaij. 2008. "Different Palm Oil Production Systems for Energy Purposes and Their Greenhouse Gas Implications." *Biomass and Bioenergy* 32: 1322-1337.

Wilcove, D. S., and P.K. Lian. 2010. "Addressing the Threats to Biodiversity from Oil-Palm Agriculture." *Biodiversity Conservation* 19: 999-1007.

Williams, S.M. 1999. "Voluntary Environmental and Social Accounting Disclosure Practices in the Asia-Pacific Region: An International Empirical Test of Political Economy Theory." *The International Journal of Accounting* 34 (2): 209-238.

Wiseman, J. 1982. "An Evaluation of Environmental Disclosures Made in Corporate Annual Reports." *Accounting, Organizations and Society* 7 (1): 53-63.

Wu, T.Y., A.W. Mohammad, J.M. Jahim, and N. Anuar. 2009. "A Holistic Approach to Managing Palm Oil Mill Effluent (Pome): Biotechnological Advances in the Sustainable Reuse of Pome." *Biotechnology Advances* 27 (1): 40-52.

Yusoff, H., G. Lehman, and N. M. Nasir. 2006. "Environmental Engagements through the Lens of Disclosure Practices." *Asian Review of Accounting* 14 (1/2): 122-148.

Yusoff, H., N. Yatim, and N.M. Nasir. 2004. "Analysis on the Development of Environmental Disclosure Practices by Selected Malaysian Companies from 1999-2002." *Malaysian Accounting Review* 4 (1): 49-73.

Yusoff, S. 2006. "Renewable Energy from Palm Oil - Innovation on Effective Utilization of Waste." *Journal of Cleaner Production* 14: 87-93.

Yusoff, S., H. Yusoff, and G. Lehman. 2007. "Environmental Reporting in a Developing Country: A Case on Status and Implementation in Malaysia." *Journal of Cleaner Production* 15: 895-901.

Zeghal, D., and S.A. Ahmed. 1990. "Comparison of Social Responsibility Information Disclosure Media Used by Canadian Firms." *Accounting, Auditing & Accountability Journal* 1: 38-53.

APPENDICES

APPENDIX 1A

28th June 2011

Dear Sir/Madam

INVITATION TO PARTICIPATE IN A RESEARCH PROJECT –
Determinants of environmental disclosure in the oil palm industry in Malaysia

I am undertaking research for my Doctor of Business Administration in the area of environmental disclosure in the oil palm industry in Malaysia. The aim of my research is to study the influence of stakeholder power, strategic posture and economic performance on the extent of environmental disclosure in Malaysian oil palm organisation/companies annual reports. My research includes a comparison of the extent of environmental disclosure between oil palm and non-oil palm companies. My research will also study the drivers of and impediments to environmental disclosure from the perspective of oil palm managers.

Your assistance is requested in carrying out this research study on determinants of environmental disclosure in the oil palm industry in Malaysia. The findings will provide insights of value for the oil palm industry at the state and federal level, and your organisation/company in particular, on ways to improve environmental disclosure in the oil palm business. We can provide you with a copy of the aggregated results of this study.

Data collection for this study will involve a number of methods including face-to-face interviews with oil palm organisation/company senior managers. These face to face interviews will be scheduled at times of mutual convenience and will take approximately 15-30 minutes. I am planning to travel to Malaysia to conduct the

interviews in July 2011 and also in November 2011. I would very much like the opportunity to be able to interview a senior manager of your organisation/company during these times. Please find enclosed an interview consent form. It would be appreciated if you could please return the completed interview acceptance form together in the reply paid envelope supplied or email/fax to me whichever is convenient for you. In order to enable timely collection of the data it would be appreciated if your response is received as soon as possible.

Your kind cooperation in assisting with the collection of the data for my Doctorate research is very much appreciated. If you have any queries or comments regarding this request please contact me either by email: frederica.mojilis@postgrad.curtin.edu.au or frederica99@gmail.com or telephone +61430629898 (Australia) or +60109459368 (Malaysia) or fax +6088711799 (Malaysia).

Yours sincerely

Frederica Mojilis
Doctorate Student
Graduate School of Business
Curtin University

Professor Robert Evans
Supervisor
Graduate School of Business
Curtin University

APPENDIX 1B

CONSENT TO PARTICIPATE IN A RESEARCH PROJECT –

Determinants of environmental disclosure in the oil palm industry in Malaysia

Organisation/Company _____

Name of Senior Manager _____

Date of Interview _____

Time of Interview _____

Comments _____

_____

I have been informed of and understand the purpose of the study and I agree to participate in the study as outlined to me.

Signature _____

Please return to:

Frederica Mojilis
(Doctorate Student of Curtin University)
P.O. Box 30298
88700 Kota Kinabalu, Sabah
MALAYSIA

APPENDIX 1C

QUESTIONS FOR FACE-TO-FACE INTERVIEWS WITH CEO OR SENIOR MANAGERS OF MALAYSIAN OIL PALM ORGANISATIONS/COMPANIES

RESEARCH BACKGROUND

My research aims to examine the influence of stakeholder power and company performance on environmental disclosure of Malaysian oil palm companies. This research will additionally assess the drivers of and impediments to environmental disclosure from the perspective of oil palm managers in government organisations/agencies and listed/ non-listed companies. The results of this research will add to the literature on the determinants of voluntary disclosure and will provide greater insight into the extent and causes of voluntary disclosure in the palm oil industry.

Environmental disclosures are programmes or activities that aids in the preservation/protection of the environment such as biodiversity and wildlife protection programmes or activities that organisations/companies voluntarily disclose to the public through various channels such as the annual reports.

This semi-structured interview is part of a pilot with the main objective to assist in designing a questionnaire survey instrument.

IN APPRECIATION

I want to thank you in advance for your participation and for sharing with me valuable information about your organisation/company especially with respect to your biodiversity/environmental/wildlife protection programmes/activities.

Your participation and that of your organisation will remain anonymous and only statistical aggregations will be reported. In appreciation for your participation, an analysis of the results of this study will be submitted to your organisation/company upon completion of this research.

IDENTIFIERS

Organisation/Company:_____

Name: _____

Position: _____

Date: _____

I agree/not agree that this interview be audio-recorded _____

1. Does your organisation/company undertake any biodiversity/environmental/wildlife protection programmes/activities? Yes/No (please explain)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

2. Does your company disclose biodiversity/environmental/wildlife protection programme/activities in its annual report? (if yes, which ones?)

_____

_____

3. Who do you consider to be the most important stakeholders in your company? (please rank in order of importance)

_____

_____

_____

_____

_____

_____

4. Do the stakeholders above influence your decision to disclose or not disclose environmental information? (if yes, why?)

_____

_____

_____

_____

5. Do you continually monitor what these stakeholders are thinking about your organisation/company's environmental responsibility? How?

_____

_____

_____

_____

6. Do you think that very profitable oil palm organisations/companies would be more likely to disclose environmental information? Why?

_____

_____

_____

_____

7. In your opinion, what are the drivers and impediments to public environmental disclosure in oil palm organisations/companies annual reports?

   Drivers/motivations

_____

_____

_____

Impediments

_____

_____

_____

_____

_____

8. Do you think that compulsory, transparent and audited environmental public disclosure would be good for oil palm business? Why or why not?

_____

_____

_____

_____

_____

_____

9. Do you believe that oil palm organisations/companies should disclose information which can prove detrimental to their profitability or reputation? Yes/No (give reasons)

_____

_____

_____

_____

_____

_____

_____

_____

10. In order to improve environmental disclosure and transparency, what are the **three** most important types of information oil palm organisations/companies should disclose in their annual reports?

_____

_____

_____

_____

_____

11. Besides the annual report, where else does your organisation/company disclose biodiversity/environmental/wildlife protection programmes/activities? (sustainability report, company catalogues, brochures, pamphlets, webpage or other communication channels)? Including the annual report which do you think is the most important (rank in order of importance)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

QUESTIONNAIRE REFINEMENT

1. Is the instruction clear?

   Yes ☐

   No ☐ Suggestion(s)

   _____

2. Is the layout clear and attractive?

   Yes ☐

   No ☐ Suggestion(s)

   _____

3. Which, if any, question is unclear?

   All questions are clear ☐

   Question no. _____ is/are not clear.

4. Which, if any, question you felt uneasy to answer?

   All questions are good ☐

   I felt uneasy answering Question no. _____.

5. Is there any topic that was omitted?

   All topics related to environmental disclosure is covered ☐

   Suggested topics for inclusion

   _____

   _____

   Other comments

   _____

   _____

   _____

APPENDIX 2D

FEEDBACK OF INTERVIEW NOTES AND TRANSCRIPTION

Determinants of environmental disclosure in the oil palm industry in Malaysia

I HAVE READ THE NOTES AND TRANSCRIPTION ATTACHED AND CERTIFY THAT IT IS AN ACCURATE RECORD OF THE INTERVIEW.

_____ _____

SIGNATURE DATE

Organisation/Company _____

Name of Senior Manager _____

Date of Interview _____

Time of Interview _____

APPENDIX 2A

2nd January 2012

Dear Sir/Madam

INVITATION TO PARTICIPATE IN A RESEARCH PROJECT –
Determinants of environmental disclosure in the oil palm industry in Malaysia

I am undertaking research for my Doctor of Business Administration in the area of environmental disclosure in the oil palm industry in Malaysia.

The aim of my research is to study the influence of company stakeholders and performance on the extent of environmental disclosure in Malaysian oil palm companies annual reports. My research will also study the drivers of and impediments to environmental disclosure from the perspective of oil palm managers.

Your assistance is requested in carrying out this research study by participating in a questionnaire survey. The survey will take approximately 15-20 minutes to complete. Individual companies and participants in this survey will remain confidential and will not be identified in the study. The findings from this research will provide insights of value for the oil palm industry at the state and federal level on ways to improve environmental disclosure in the oil palm business. We will provide you with a copy of the aggregated results of this study.

Please return the completed questionnaire survey form in the reply paid envelope supplied or by email/fax to me whichever is convenient for you. Consent is assumed when participants return the questionnaire survey. In order to enable timely collection of the data it would be greatly appreciated if your response is received before 31 January 2012.

Your kind cooperation in assisting with the collection of the data for my Doctorate research is very much appreciated. If you have any queries or comments regarding this request please contact me either by email: frederica.mojilis@postgrad.curtin.edu.au or frederica99@gmail.com or telephone +61 430629898 (Australia) or +60109459368 (Malaysia) or fax +6088711799 (Malaysia).

Yours sincerely

Frederica Mojilis
Doctorate Student
Graduate School of Business
Curtin University

Professor Robert Evans
Supervisor
Graduate School of Business
Curtin University

APPENDIX 2B

DETERMINANTS OF ENVIRONMENTAL DISCLOSURE IN THE OIL PALM INDUSTRY IN MALAYSIA

This questionnaire seeks information on the determinants of environmental disclosure in the oil palm industry in Malaysia. Environmental disclosure is disclosure made by organisations or companies, normally in their annual reports or other channel of communication, about the positive and negative impacts of the physical environment within which they operate. This includes information on environmental pollution, wildlife/biodiversity protection programmes, and so on.

The majority of the questions require your view or opinion. There is no right or wrong answer. However your careful consideration of each response, based on your own experiences and beliefs is requested.

Your responses will be anonymous and only statistical aggregations will be reported.

This questionnaire will take approximately 15 – 20 minutes to complete. Unless otherwise requested, please circle your response to each question.

Please return the completed questionnaire in the self addressed envelope by the 31st March 2012.

Your kind participation in this study is greatly appreciated.

SECTION ONE: STAKEHOLDERS

1. In your opinion, when preparing the annual report of your company how much influence do the following parties have on the type of information (content) that will be included in the annual report?

	no influence	little influence	reasonable influence	high influence	very high influence
a. Shareholders**/**owners	1	2	3	4	5
b. Creditors/financiers	1	2	3	4	5
c. Customers/buyers	1	2	3	4	5
d. Suppliers	1	2	3	4	5
e. Ministry of P & C /other government dept	1	2	3	4	5
f. Lobby groups/NGOs	1	2	3	4	5
g. Media	1	2	3	4	5
h. Employees	1	2	3	4	5
i. Senior management	1	2	3	4	5
j. Board of Directors	1	2	3	4	5
k. Others (please specify) _____ _____ _____	1	2	3	4	5

2. Who would you consider your company's most important stakeholders? Rank in order of importance, 1 being the most important and 10 being the least important.

Shareholder/owners ☐

Creditors/financiers ☐

Customers/buyers ☐

Suppliers ☐

Ministry of P & C/
other government department ☐

Lobby groups/NGOs ☐

Media ☐

Employees ☐

Senior management ☐

Board of Directors ☐

3. Are there any other stakeholders who you believe influence environmental disclosure not listed above? Please list below

_____

_____

_____

SECTION TWO: STRATEGY

4. Is your company concerned about the effects of its operations/activities on the environment?

1 not at all	2 little concern	3 reasonably concerned	4 highly concerned	5 very highly concerned

5. Is environmental concern specified in the company's objectives?

Yes ☐

No ☐

6. Is there personnel/department/committee with a dedicated environmental responsibility?

Yes ☐

No ☐

7. Does your company contribute to environmental protection through donations?

1 never	2 seldom	3 quite often	4 very often	5 all the time

8. Is there a formal environmental review or evaluation?

Yes ☐

No ☐

9. Is environmental protection embedded within company culture?

1 not at all	2	3 slightly embedded	4	5 completely embedded

10. Is your organisation/company ISO 14001 certified?

Yes, and fully implemented ☐

In the process of getting certified ☐

No, and not planning to get certified ☐

11. Is your organisation/company RSPO certified?

Yes, and fully implemented ☐

In the process of getting certified ☐

No, and not planning to get certified ☐

SECTION THREE: ENVIRONMENTAL ACTIVITIES

12. What are the main environmental activities/programmes of your organisation/company? This should include training, education, donations, etc. Please list in descending order of importance, the most important on top and least important at the bottom.

Environmental activities/programme	Estimated cost/budget (RM)	On-going OR one time activity	Is this activity disclosed in the annual report, others (please specify)

SECTION FOUR: ENVIRONMENTAL DISCLOSURE

13. Does your company engage in environmental disclosure?

Yes ☐ If Yes, proceed to Question 14

No ☐ If No, proceed to Question 15

14. In your opinion, how important are the following factors with regards to environmental disclosure of your company?

Enhance corporate image/PR

1	2	3	4	5
not at all important	not so important	quite important	important	very important

Good corporate citizenship/obligation to community

1	2	3	4	5
not at all important	not so important	quite important	important	very important

Win awards/recognition

1	2	3	4	5
not at all important	not so important	quite important	important	very important

Improve employee morale

1	2	3	4	5
not at all important	not so important	quite important	important	very important

Increase public awareness

1	2	3	4	5
not at all important	not so important	quite important	important	very important

Attract new investors/opportunities

1	2	3	4	5
not at all important	not so important	quite important	important	very important

Obtain funds from wider sources

1	2	3	4	5
not at all important	not so important	quite important	important	very important

Pressure from stakeholders

1	2	3	4	5
not at all important	not so important	quite important	important	very important

Pressure from government/obtain government support

1	2	3	4	5
not at all important	not so important	quite important	important	very important

Stability and increase in share prices

1	2	3	4	5
not at all important	not so important	quite important	important	very important

Increase profitability

1	2	3	4	5
not at all important	not so important	quite important	important	very important

Compete with other companies

1	2	3	4	5
not at all important	not so important	quite important	important	very important

Chairman/management's desire to engage in environmental disclosure

1	2	3	4	5
not at all important	not so important	quite important	important	very important

15. Are the following reasons used by your company to **NOT** disclose environmental activities?

High cost of data collection/processing/auditing/publication (limited money)

1	2	3	4	5
never	seldom	sometimes	most of the time	all the time

Limited personnel/time

1	2	3	4	5
never	seldom	sometimes	most of the time	all the time

Added value is limited

1	2	3	4	5
never	seldom	sometimes	most of the time	all the time

Leads to a competitive disadvantage

1	2	3	4	5
never	seldom	sometimes	most of the time	all the time

Leads to possibility of intervention by government agencies/regulators/too much bureaucratic hassle

1	2	3	4	5
never	seldom	sometimes	most of the time	all the time

Leads to possibility of claims from political or consumer groups

1	2	3	4	5
never	seldom	sometimes	most of the time	all the time

Leads to increased demands for more disclosure

1	2	3	4	5
never	seldom	sometimes	most of the time	all the time

Leads to heightened suspicion of the company

1	2	3	4	5
never	seldom	sometimes	most of the time	all the time

Not to set precedence/not to make an issue

1	2	3	4	5
never	seldom	sometimes	most of the time	all the time

Others, please elaborate

_____

_____

_____

16. How important are the following disclosure in describing the impact on the environment of the oil palm industry?

	not important	somewhat important	quite important	important	very important
a. Data on emissions, effluents and wastes such as GHG and initiatives to reduce/manage emissions, effluents and wastes	1	2	3	4	5
b. Data on raw materials used by weight or volume and their conservation & recycling	1	2	3	4	5
c. Data on energy consumption and initiatives to provide energy-efficient or renewable energy based products	1	2	3	4	5
d. Data on water consumption and recycle/reuse	1	2	3	4	5
e. Biodiversity/ environmental/ wildlife protection programme	1	2	3	4	5
f. Support for public/private action designed to protect the environment	1	2	3	4	5
g. Narrative on procedures relating to training and raising awareness in relation to environmental impacts of operations	1	2	3	4	5
h. Inclusion of discussion on feedback from stakeholders such as	1	2	3	4	5

business partners, employees and community leaders/stakeholder engagement					
i. Presentation of current year cash flows for environmental protection programme or remediation	1	2	3	4	5
j. The use of CSR/environmental reporting guideline such as GRI, Bursa Malaysia's CSR framework or other appropriate framework	1	2	3	4	5

17. Do the following characteristics of organisations/companies influence decisions to engage in environmental disclosure?

Shareholder concentration (a small group of shareholders owning a large proportion of the company)

1 No influence	2 little influence	3 reasonable influence	4 high influence	5 very high influence

Level of leverage (debt/asset ratio) – a measure of the level of debt financing

1 No influence	2 little influence	3 reasonable influence	4 high influence	5 very high influence

Government ownership (the level of government ownership of the company)

1 No influence	2 little influence	3 reasonable influence	4 high influence	5 very high influence

Environmental concern expressed in the company's vision/mission/ Chairman's statement

1 No influence	2 little influence	3 reasonable influence	4 high influence	5 very high influence

Dedicated department/committee/personnel looking into environmental activities

1 No influence	2 little influence	3 reasonable influence	4 high influence	5 very high influence

Possession of ISO14001/RSPO certificate

1	2	3	4	5
No influence	little influence	reasonable influence	high influence	very high influence

Size (revenue) of the company

1	2	3	4	5
No influence	little influence	reasonable influence	high influence	very high influence

Listing status (public listed/not public listed)

1	2	3	4	5
No influence	little influence	reasonable influence	high influence	very high influence

Listing age

1	2	3	4	5
No influence	little influence	reasonable influence	high influence	very high influence

Profitability (Return on Assets)

1	2	3	4	5
No influence	little influence	reasonable influence	high influence	very high influence

Age of the company

1	2	3	4	5
No influence	little influence	reasonable influence	high influence	very high influence

18. How is the information on environmental activities disseminated by your organisation/company? Tick all relevant boxes.

Annual Report ☐

Sustainability report ☐

Internally to senior management ☐

Internally to all staff ☐

Externally to Ministry of P&C/ other government dept ☐

Externally to Malaysian Palm Oil Board ☐

Externally to Auditor – General ☐

Tabled in document to Parliament ☐

Externally through pamphlets ☐

Externally through news sheets ☐

Externally through web sites ☐

Others (please specify)

_____

_____

_____

SECTION FIVE: DEMOGRAPHIC DATA

Tick (√) the appropriate box:

19. Male ☐ Female ☐

20. Age Range

Under 30 ☐ 50 to 59 ☐

31 to 39 ☐ 60 and over ☐

40 to 49 ☐

21. Position/level

A member of the Board of Directors ☐

Executive Chairman/CEO ☐

Senior Manager ☐

Chief Financial Controller/Financial Manager ☐

Senior Executive/Senior Officer ☐

Executive/Officer ☐

Other ☐

22. Please indicate your length of service

a. In your current organisation

Less than 1 year ☐

1 to less than 3 years ☐

3 to less than 5 years ☐

More than 5 years ☐

b. In your current position

Less than 1 year ☐

1 to less than 3 years ☐

3 to less than 5 years ☐

More than 5 years ☐

23. Approximate size of your organisation (head count, including part – time and casual employees)

- More than 10,000 employees ☐
- Between 5,000 – 9,999 employees ☐
- Between 1000-4,999 employees ☐
- Less than 1,000 employees ☐

24. Approximate size of your organisation/company (in terms of revenue)

- Above RM1 billion ☐
- Between RM500 - RM999 million ☐
- Between RM100-RM499 million ☐
- Between RM50-RM99 million ☐
- Between RM10-RM49 million ☐
- Less than RM10 million ☐

25. Size of oil palm plantation/estate

- Above 1 million ha ☐
- 500,000 – 999,999 ha ☐
- 100,000 – 499,999 ha ☐
- 10,000 - 99,999 ha ☐
- Less than 10,000 ha ☐

26. Which category is most appropriate to your organisation?

☐ Federal Government Agency

☐ Public listed

☐ Non-public listed

☐ State Government Agency (please specify which state) _____

☐ Public listed

☐ Non-public listed

☐ Public listed company

☐ Non-public listed company

27. Please make any further comments in regards to your organisation/company's environmental disclosure below

_____

_____

_____

_____

_____

Thank you for your time in completing this questionnaire.

Would you like an analysis of the results of this study?

Yes ☐ No ☐

Name: _____

Organisation _____

Address _____

_____

Please return this completed questionnaire in the attached prepaid envelope to:

Frederica Mojilis
Doctorate Student (Curtin University)
P.O. Box 30298
88700 Kota Kinabalu, Sabah, MALAYSIA

APPENDIX 3

Ullmann (1985) Three-Dimensional Stakeholder Model	Roberts (1992)	Al-Tuwaijri, Christensen and Hughes II (2004)	Magness (2006)	Husillos and Alvarez-Gill (2008)
Sample size (N) and sample description	130 firms investigated by the CEP in 1986	198 S&P 500 firms	41 Canadian gold mining public companies	135 SMEs
Data source	Council on Economic Priorities (CEP), proxy statements, compustat, National Directory of Corporate Affairs	Annual reports	Annual reports	Financial statements (annual reports) and questionnaire
Country setting	USA	USA	Canada	Spain
Data anaylsis	Logistic regression	Three-stage least squares (3SLS) regression	OLS regression	Structural equation modelling using PLS
Voluntary disclosure investigated	Levels of corporate social disclosure	Environmental disclosure, environmental performance and economic performance (endogenous)	Extent of environmental disclosure	Environmental performance and environmental disclosure
Measurement of dependent variable	Disclosure scoring system derived from CEP ratings		Seven-point-scoring environmental factors	Assign weighting on 4 groups of environmental information
Measurement of independent variables	PSH, PAC, DERATIO, PUBAFF, FOUND, MGRROE, BETA, AGE, INDEFF, SIZE		PR, Size, Xfin, ROA	
1ST DIMENSION (Stakeholder Power)				
SH - Shareholders(+/-)	not sig. / -		not meansured	Non-organisational Stakeholder salience
GP/RP - Govt power/regulators (+)	sig. @P<.05 /+		(assume high stakeholder power)	Organisational Stakeholder salience
CP - Creditor power (+) - D/E or D/A	sig. @P< .10 /+			
LGP - Lobby group power(+)				
2ND DIMENSION (Strategic Posture)		Past env discl		
EC - Environmental Committee (+)/PUBAFF - public affairs (+)	sig. @ .10 /+	Growth		
FOUND - Philantrophic Foundation (+)	sig. @P< .001 /+	Env exposure		Proactive posture
SEC - Social/Env Concern (+)		Env concern		
ISO 14001 (+)		Profit margin		
PR - no. of press release(+)		Size	sig. @P<.05 /+	
3RD DIMENSION (Economic Performance)				
Beta (-)	sig. @ P<.10 /-			Organisational slack
A/ROA(+/-)			not sig./-	B=0.164, P<.001
MGRROE (+)	sig. @P< .05 /+			
XFin - External funding(+)			sig. @P<.05 /+	
CONTROL VARIABLES				
Age/Risk (+)	sig. @ P<.001 /+			
INDEFF(+)	sig. @P< .05/+			
L/Size (+/-)	not sig. /-		sig. @P<.01/+	
R/Adjusted R^2	Chi-square=34.29	R^2=0.5483	R^2=0.33	R^2=0.218 (Env perf)
F value	R=0.296			R^2=0.218 (Env disc)
Significant level	P<.001			P<.01

Ullmann (1985) Three-Dimensional Stakeholder Model	**Kent and Chan (2009)**		**Elijido-Ten (2009)**		**THIS STUDY**	
Sample size (N) and sample description	102 largest listed firm in the Australian Stock Exchange		79 disclosing firm		33 oil palm (OP -165 observations) and 33 non-oil palm (NOP - 165 observations) PLCs over 5 years of data	
Data source	Annual reports	Annual reports	Annual reports	Annual reports	Annual reports, semi-structured interviews and questionnaire survey (OP)	Annual reports (NOP)
Country setting	Australia		Malaysia		Malaysia	
Data anaylsis	OLS regression	OLS regression	OLS regression	OLS regression	Linear regression	Linear regression
Voluntary disclosure investigated	Quality of environmental disclosure	Quantity of environmental disclosure	Quality of environmental disclosure	Quantity of environmental disclosure	Extent of environmental disclosure (OP)	Extent of environmental disclosure (NOP)
Measurement of dependent variable	Environmental disclosure index ratings	Sentence count	Environmental disclosure index ratings	Sentence count	Ten-point-scoring environmental factors	
Measurement of independent variables	SP, CP, RP, LGP, MS, EC, AROA, LSIZE, RISK		SP, CP, GP, EC, ISO,AROA, LSIZE, AGE		SP, CP, GP, SEC, ISO 14001, EC, LSIZE, AGE	
1ST DIMENSION (Stakeholder Power)						
SH - Shareholders(+/-)	sig. @P<.05 /+	sig. @P<.05 /+	not sig. /-	not sig. /-	not sig. /+	sig. @ P<.05/+
GP/RP - Govt power/regulators (+)	sig. @P<.10 /+	not sig./-	sig. @ P<.10/+	sig. @ P<.10/+	sig. @ P<.05/+	sig. @ P<.001/-
CP - Creditor power (+) - D/E or D/A	not sig./-	sig. @P<.10 /-	not sig. /+	not sig. /+	not sig./-	not sig./+
LGP - Lobby group power(+)	sig. @P<.001/+	sig. @P<.001/+				
2ND DIMENSION (Strategic Posture)						
EC - Environmental Committee (+)	sig. @P<.01/+	sig. @P<.05 /+	sig. @ P<.001/+	sig. @ P<.001/ +	sig. @ P<.001/+	sig. @ P<.001/+
FOUND - Philantrophic Foundation (+)						
SEC - Social/Env Concern (+)	sig. @P<.001/+	sig. @P<.001/+			sig. @ P<.01/+	not sig./+
ISO 14001 (+)			sig. /p<.05/+	sig. @ P<.10/ +	sig. @ P<.001/+	not sig./+
PR - no. of press release(+)						
3RD DIMENSION (Economic Performance)						
Beta (-)						
A/ROA(+/-)	not sig./+	not sig./-	not sig. /-	not sig. /-	not sig. /+	sig. @ P<.001/+
MGRROE (+)						
XFin - External funding						
CONTROL VARIABLES						
Age/Risk (+)	sig. @P<.05 /+	not sig./-	not sig./+	not sig. /+	not sig./+	sig. @ P<.001/+
INDEFF(+)						
L/Size (+/-)	sig. @P<.05 /+	sig. @P<.001/+	not sig. /+	not sig. /+	not sig. /+	not sig. /+
R/Adjusted R^2	Adjusted R^2 = 0.66	Adjusted R^2 = 0.53	Adjusted R^2 = 0.237	Adjusted R^2 = 0.18	Adjusted R^2 = 0.696	Adjusted R^2 = 0.775
F value	F = 22.22	F = 13.22	F = 4.465	F = 3.58	F = 26.571	F = 44.482
Significant level	p<.001	p<.001	p<.001	p<.01	p<.001	p<.001

DESCRIPTION OF INDEPENDENT VARIABLES

SP/PSH - Shareholder power (measured as the proportion of ownership of company held by shareholders holding 5% or more of total shareholding);

CP - Creditor power (Total Debt/Total Asset Ratio) of company;

GP - Government power (measured as the proportion of ownership of company held by government holding 5% or more of total shareholding/companies in environmentally sensitive industry;

RP - Regulatory power (1 if company has Environmental Protection Authority prosecutions, 0 otherwise;

LGP - Lobby group power (1 if the firm operates in an industry with high environmental sensitivity; 0 otherwise);

PAC - Natural log of the dollars contributed to its corporate political action committee (a measure of political risks);

DERATIO - Average debt to equity ratio;

PUBAFF - Average number of corporate affairs staff;

FOUND - Sponsorship of a philanthropic foundation;

SEC/MS - Existence of a social/environmental concern in mission/vision/chairman's statement;

ISO 14001 - Possession of ISO 14001 certification

EC - Environmental committee (existence or otherwise of an environmental committee);

PR - Number of press releases;

XFin - Existence or otherwise of external financing;

A/ROA/ - Average/Return on Assets;

MGRROE - Average annual change in equity;

BETA - Market model measure of systematic risk;

AGE - Age of corporation;

Log Size - Natural logarithm of size (market capitalisation or revenues);

Risk - Age of company;

INDEFF - Existence or otherwise of company in high profile industry.